The Builder.

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ILLUSTRATIONS.

Victoria Memorial Competition :—
General View and Plan ..... Design by Mr. T. G. Jackson, R.A.
Design for Triumphal Arch and Entrance Gates to Roadway ..... By Mr. T. G. Jackson, R.A.
Design for Triumphal Arch ..... By Dr. Rowand Anderson.
Rood Screen, S. Denys, Sleaford ..... Drawn by Mr. Herbert Kirk

Blocks in Text.

Illustrations to Mr. Gotch's Book on Renaissance ..... Pages 428 and 429
Illustrations to Student's Column ..... Page 441
Plan of Site Proposed for Liverpool Cathedral ..... Page 431

CONTENTS.

Early Renaissance Architecture in England 427
New Decisions on the Workmen's Compensation Act 430
Notes 430
Egypt Exploration Fund 433
The Architectural Association Discussion Section 434
Finishing a Dwelling House 434
The Surveyors' Institution 437
Illustrations :—
Victoria Memorial Competition 438
Rood Screen, St. Denys', Sleaford 438
The New Government Offices 439
Archæological Societies 439
The London County Council 439
Applications under the 1894 London Building Act 440
New Board Schools and their Sites, London 440
Correspondence :—
Grundy's Flushing Cistern 441
The Student's Column.—Gas and Gas Fittings—20 441
Books Received 442
Obituary 442
General Building News 442
Miscellaneous 443
Capital and Labour 444
Recent Patents 445
Legal :—
Builders' Liability under the Workmen's Compensation Act, 1897 444
Case under the Public Health Act 444
The Measurement of Buildings under the Workmen's Compensation Act 444
Employers' Liability Act 444
Case under the London Building Act, 1894 445
Ancient Lights 445
The London County Council and Fire-resisting Staircases 445
Meetings 446
Some Recent Sales of Property 446

Early Renaissance Architecture in England.

AMID the recurrent appearance of works in English Renaissance architecture it becomes rather difficult to distinguish between the object and scope of one work as compared with another; it seems at all events certain that English Renaissance architecture is at present regarded as an attractive subject both by architectural authors and architectural publishers. We have had Mr. Blomfield's work, "A History of Renaissance Architecture in England," followed by an abridged edition; Messrs. Belcher & Macartney's "Later Renaissance Architecture in England"; Mr. Gotch's "The Architecture of the Renaissance in England," a folio publication in which the illustrations formed the most important element; and now we have another work from the same author under the title, "Early Renaissance Architecture in England*;" a book in literary form, in which the illustrations, though numerous, are on a small scale and subordinate to the text, and the publication is of the nature of a historical handbook of the subject. In regard to Mr. Blomfield's book, the author of the present work defends himself from the charge of repeating the same subject by pointing out that, though Mr. Blomfield's work starts from the beginning of the sixteenth century, it does not dwell at length upon the earlier work, but is chiefly devoted to that of the seventeenth and eighteenth centuries. Mr. Gotch, in fact, in this book, classes Tudor and Elizabethan as "Renaissance," a classification to which, as a matter of definition, we decidedly object. If Tudor and Elizabethan work is called Renaissance, we are then called on to use the word Renaissance for completely different types of architecture, which have really very little in common. The fact is, we take it, that Renaissance is a popular word just now, and a better publishing name than Tudor or Elizabethan.

The first partial intrusions of Italian detail and (apparently) of Italian workmanship into English architecture are no doubt of great interest, and Mr. Gotch has collected and illustrated a good many examples of them; but these flowerings of Italian ornament in details do not affect the architectural style as a whole; typical Elizabethan architecture, in spite of them, has still much more affinity with late Gothic than with genuine Renaissance; nor do the channelled terminations to the pendants in the Hampton Court roof make that anything other than a late Gothic roof. The gradual introduction of points of symmetry in the plan, not called for except for the sake of symmetry, is in reality a much more important indication of the invasion of the Renaissance spirit than is shown in mere ornamental detail. Mr. Gotch places on two contiguous pages two plans which illustrate this in rather a curious manner. In the plan of Compton Wynyates a bay-window to the hall comes in close to one angle of the internal courtyard. In the plan of Sutton Place a bay-window to the hall, square on plan, comes in near one angle of the courtyard in the same way, but in this case it is duly balanced by a similar bay at the opposite angle, lighting however only a small and secondary apartment. The difference between the two buildings, according to Mr. Gotch's dates, is only four or five years (1520 to 1523-5); this is however rather a coincidence than an indication of a rapid chronological progress towards symmetry. Some of the details at Sutton are bad Italian in character, but the mouldings, as well as the general effect, are still late Gothic.

The development of plan in the Classic direction seems indeed to have been rather capricious; we have comparatively early plans which are very symmetrical, and later ones which are much more Mediæval, such as that of Hengrave Hall (1538), where the bay-window of the hall is nearly central with one side of the courtyard but not quite, and the plan generally is quite unsymmetrical. What distinguishes it is the use of a central courtyard smaller in proportion to the rest of the plan than is the case with the older quadrangle plans, and with the unwonted and rather modern device of a corridor of communication round three sides of the court and lighted from it; all the rooms except the hall (which forms the fourth side of the court) getting their light through the exterior walls.

This provision of a communication corridor with a good light from a central area was however an unusual refinement in regard to interior access to the rooms. The study of some of the plans in this volume is very interesting. The old quadrangle plan seems to have been the precursor of two forms of more compact plan in which there was still a reminiscence of the centre quadrangle. There is the plan with a central court for light, around which the rooms were grouped, and the plan with a central hall, top-lighted, around which also the rooms were grouped, but with, of course, no light except through the outer walls. Wollaton Hall (1580-88) is an example of the latter plan; and here nearly all the rooms open out of each other. Barlborough Hall, of about the same date, is built round a small court (fig. 1), now fitted with a modern staircase; this court does not seem to have been used for light, as far as the present plan shows; as it stands it is an intercommunication hall or lobby; but whether this was its original use, or whether the doors opening into it are modern, the author does not tell us. As will be seen, there was through communication all round the house, from room to room, in the naïve fashion of the day, without any use of the central space. The plan is a curious mixture of complete, almost classical, symmetry externally, with absolute lack of it internally. With all its exterior symmetry, however, the architecture is of late Gothic type, as may be surmised from the semi-octagon plan of the bays; these go right up, rising above the parapet and forming a species of towers; a treatment which, as Mr. Gotch truly remarks, "lends much distinction to an otherwise simple exterior." What was the reason for the extraordinary thickness of the interior walls as compared with the exterior ones there is nothing in either plan or view to explain. Chastleton, in Oxfordshire (fig. 2), dated 1603, shows the centre court pierced for windows, but nearly all the house consists of rooms opening out of each other, in a manner absolutely without plan or order, and as if the partition walls had been put up anyhow. In Bolsover Castle (fig. 3), dated 1613, we have again a plan of nearly complete symmetry outwardly, and with a great dignity in the arrangement of the forecourt; but here again all the symmetry is forgotten as soon as we get inside, and the plan becomes, one may say, more naïve than ever in the arrangement for intercommunication; but it should be a charming plan as regards internal effect, and those little surprises which do so much towards rendering a house interior interesting; and it

*"Early Renaissance Architecture in England: a historical and descriptive account of the Tudor, Elizabethan and Jacobean periods." By J. Alfred Gotch, F.S.A. London: B. T. Batsford. 1901.

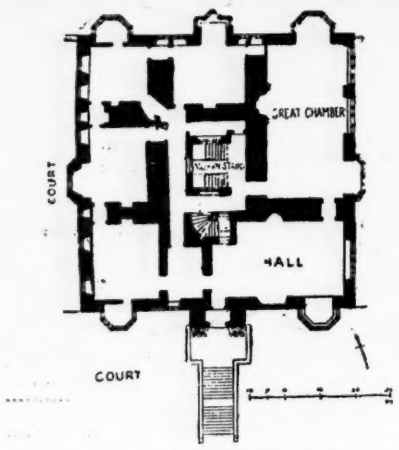


Fig. 1.—Barlborough Hall.

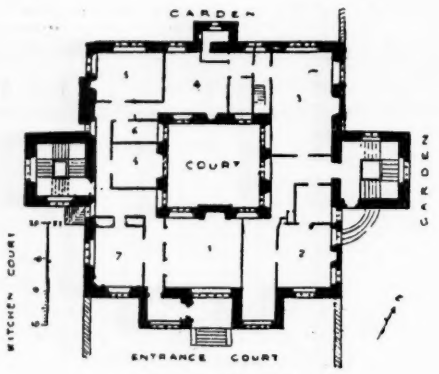


Fig. 2.—Chasleton.

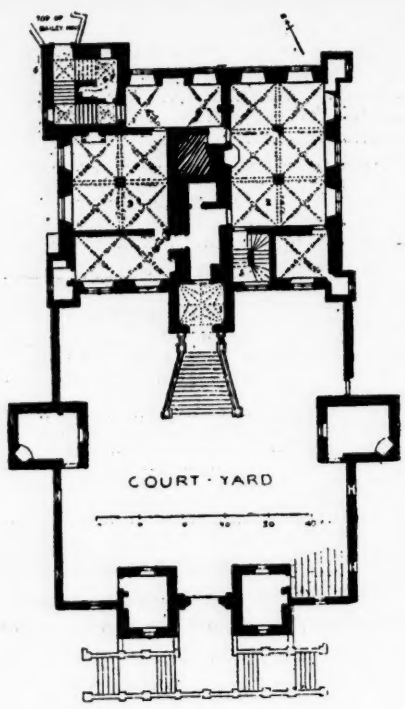


Fig. 3.—Bolsover Castle.

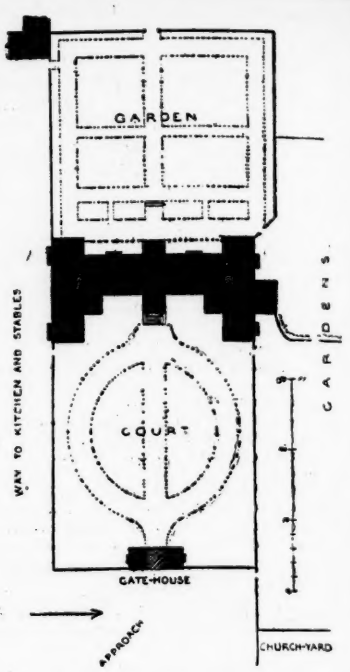
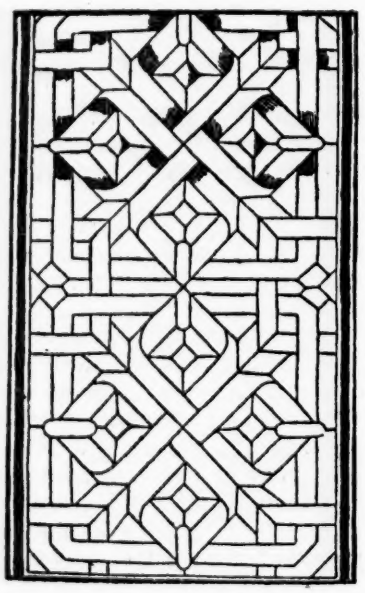


Fig 5.—Doddington Hall.



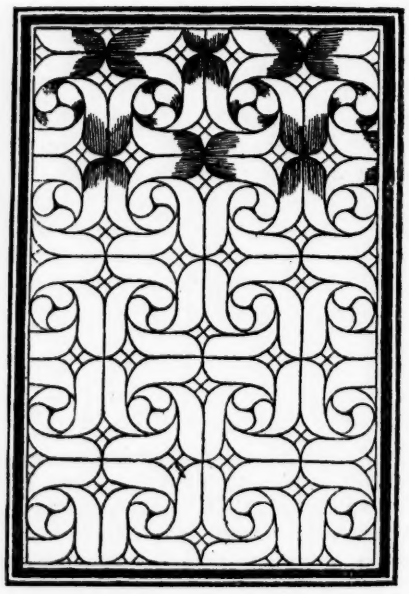


Fig. 6.—Glazing Patterns from Walter Geddc's Book (1615).

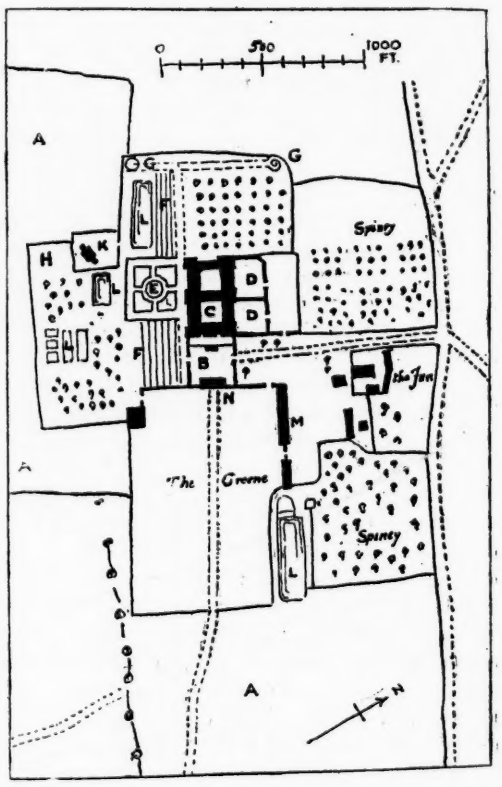


Fig. 4.—Holdenby House.

is worth notice that though there is there no interior court, either for light or for passage, we still seem to have the reminiscence of the interior court in the shape of that small square of (apparently) solid wall left in the centre, of which the author gives no explanation, but which certainly requires one. As it stands in the plan, it looks as if they could not do without something in the centre to build round.

Mr. Gotch gives the block-plan of Holdenby House (fig. 4) as an example of the laying out of the ground around an Elizabethan house, though in this case it may be said that there is not much laying out at all. While the drive traversed the park it was left to wind as the undulations of the ground suggested, but within a quarter of a mile of the lodge (N on plan) it became a straight road through "the green" up to the lodge, which stood on the axis of the house. "The house was built round two great courts, the first 128 ft. by 104 ft., the second 140 ft. by 110 ft. . . . The house covered nearly two acres, the basecourt (B) more than one acre; the green seventeen acres. In comparison with the house the village is a mere collection of outhouses, not so extensive as the range of stabling." This gives a good idea of the magnificent scale on which these Elizabethan houses of great people were planned, though it may be added that it has neither the magnificence nor the stateliness contemplated in Bacon's sketch of his imaginary house and surroundings in the Essay "Of Building." The much smaller plan of Doddington Hall and its forecourt and garden (fig. 5) is a good example of stately and symmetrical laying out of the ground round a house, especially in the combination of straight and circular drive from the gate-house.

In speaking of the general aspect of the Elizabethan houses, Mr. Gotch observes that their often picturesque and elaborate appearance is generally produced by very simple means. The picturesque effect of such houses as Haddon and Compton Wynyates is due to irregularity of plan; but in the Elizabethan house the design and plan (externally at all events) are regular and symmetrical, the picturesqueness springs from the manner of employing gables, windows, and chimneys. As the author says, there is "an exuberant vitality" about these houses, in spite of their occasional misuse of classic detail and insertion of unmeaning pilasters, which accords with the vitality of the literature of the period. There could be no better example of this than Burghley

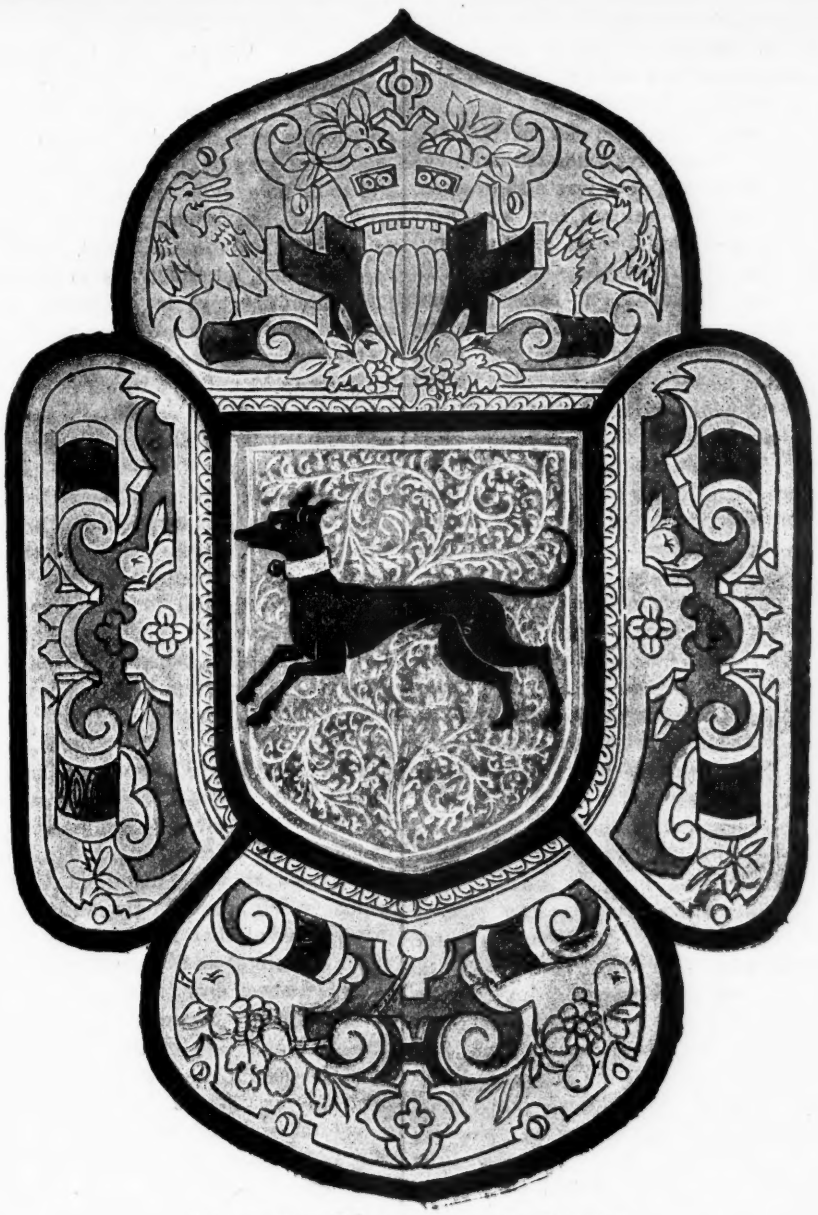


Fig. 7.—Glass Panel from Moreton Old Hall.

House, the first impression of which, with its crowds of chimneys and turrets, is ineffaceable from the memory. The bay window, with as much of it pierced as was possible, is a feature which was perhaps made too much of. Mr. Gotch devotes some remarks and illustrations to this subject, and gives the palm to the great twin bays of Kirby Hall; but this habit of carrying the mullioned window all round the bay, leaving it to a great extent cut in two in the middle, is rather of the nature of a *tour de force* in building, and one feels that the mullions of the lower window in many cases have a greater weight to carry than they should have, for appearance at all events; besides the result that the room is overlighted; a point specially criticised by Bacon, who complains that you find rooms where "you cannot tell where to be to come out of the sun." The front of Aston Hall, which Mr. Gotch shows on the same page as Kirby, is worse, for the windows are continued all along the wall between the bays, as well as all round them, making one continuous belt of window with only a very narrow pier at each angle of the building, so that the whole mass of the upper wall and parapet seem to stand in the air on stilts. That this should have remained in good preservation shows what careful and sound mason's work must have been done in setting up these windows, but it is really an effect much more suitable to a timber and plaster cottage than to a stone mansion on a large scale, and it is not one by any means worth imitating, as some persons seem disposed to imitate it. One advantage of the mullion as an architectural feature is that continuity of this kind may be obtained by using wall mullions only between the windows, ranging with them—a much more solid and satisfactory method than cutting away a whole mass of wall from corner to corner of the building, and leaving one to wonder how it stands.

The subject of the decorative treatment of the interior of Elizabethan and Jacobean houses receives abundant illustration and comment in Mr. Gotch's book, and this part of the subject is worth careful consideration on account of the many suggestions it affords to the modern designer and decorator. We quite concur with the author in his admiration for the effect of the portion of panelling shown in his fig. 138 (p. 152), an upright panel perfectly plain in the stiles and in the lower portion of the panel, but with a design of carved dolphins formed in a rectangular sinking at the top of the panel. This placing of the ornament at one point only is very characteristic, and may be applied in various different ways. The important subjects, in a decorative sense, of fireplaces and ornamental ceilings are also largely illustrated. The artistic importance of the "strap-work" plaster ceiling has perhaps been somewhat exaggerated; a good many of these ceilings are very much alike; when you have the *motif* of one you have that of all, with the exception of minor differences of detail; and in fact Mr. Gotch seems to think that the plasterers had stock designs from which they worked, though absolute repetitions of the same details are seldom found.

The "Long Gallery," to which the author draws special attention as one of the most characteristic features of Elizabethan and Jacobean houses, is one to which the modern architect of large mansions ought to give his attention. No finer feature, nor one which more repays the space bestowed on it, can be introduced into a house; and it may be planned, as in some Elizabethan houses it was, to serve not only as an apartment of State in itself, but as at the same time a means of communication and access to other rooms; and this is the use that it might be made to fulfil in a modern mansion. In a mansion of the highest class there should properly be no such thing as a mere corridor or "passage"; the conventional passage should be widened into a gallery, for more stately effect, while still fulfilling its practical use as a means of communication from room to room. And it is in such galleries more particularly that there is opportunity for the use of stained glass in decorative and heraldic inventions. The author gives a few useful notes as to where the best glass of the period may be found—some of it not very well known; and he gives some interesting specimens of ornamental glazing from Walter Gedde's "Booke of Sundry Draughtes," of which we have reproduced two (fig. 6) which are of rather unusual and ingenious character. It is worth notice that Gedde describes the designs as "principally serving for Glasiers," but also as "not impertinent for Plasterers and Gardiners," a phrase which shows how this taste for geometric devices ran through everything in the decorative art of the period. If a man could make an ingenious diaper pattern for window glazing, he might just as well carry out the same idea in plaster rib-work or in garden-beds. The glass panel from Moreton Old Hall (fig. 7), of which the publisher has kindly lent us the block, is a bold and effective piece of work of its kind, and illustrates the period when Dutch strap-work was in vogue, forming an ornamental border to the shield with the family device.

The book concludes with two interesting chapters; one on "Sixteenth-Century House-Planning as Illustrated by John Thorpe's Drawings," in which a great many of Thorpe's plans and quasi-perspective elevations are collected for study and comparison, including a most curious and clever plan based on a hexagon, with circular stair towers in the re-entering angles; and one on the much vexed question as to the "Architectural Designs of the Sixteenth Century." The author's conclusion is that while men like Thorpe provided plans and "up-rights," each trade employed on the building provided it own details and that this accounts for what is otherwise puzzling—the diversity of details in buildings supposed to have been the work of the same architect; and probably that is about the truth of it.

Mr. Gotch's book, which is full of information, forms an excellent companion to Mr Blomfield's, the one being full where the other is more brief. The two together form a very complete history of English architecture from the sixteenth to the eighteenth centuries.

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NEW DECISIONS ON THE WORKMEN'S COMPENSATION ACT.

THE Court of Appeal, as some of our readers may have noticed, early last week began to sit solely for the purpose of clearing off the arrears in the list of appeals arising out of the Workmen's Compensation; it has already given during this last sitting several important decisions which are likely to affect the bearing of this Act in the immediate future. Perhaps the two of most interest are those which have thrown further light on that curious part of the Act, the limitation of compensation in the case of workmen on buildings to edifices exceeding thirty feet in height. In McGrath *v.* Neill, the question arose from what point the measurement of the building was to commence. The building on which the accident occurred was of brick, and the height from the bottom of the footings, above the concrete foundations, to the top of the building was more than 30 ft.; but it was contended on behalf of the employers that the proper place from which to measure was the ground, and if this test was right then the building was not 30 ft. high. This view, however, the Court would not accept. The object of the limitation was, it was said, to exempt small and unimportant buildings on which small and poor builders were at work. But as a vast building had a great deal of its wall below the ground level, it was impossible, in the opinion of the Court, to limit the Act as was desired by the counsel for the employers. There was, apparently, some obscurity in the evidence as to the extent, if any, to which the footings were covered in. The Master of the Rolls could, he said, see no evidence that there was more than a flooring at the top of the footings. From this statement we assume that had the footings been covered in by solid earth the Court would in that case have considered the ground level the proper commencement of the measurement. The practical result, therefore, of this decision seems to be that measurement, which is in every case a question of fact, should begin from the top of the foundation if the portion from this level is uncovered. The same point arose again in Knight *v.* Cubitt, but here the building, instead of being new, was old, and was in course of demolition. The whole of it was admittedly under 30 ft. high at the time of the accident in question, except the party wall. Here again the decision of the Court was in favour of the workman, it being held that a substantial part of the building, namely, the party wall, was more than 30 ft. high. If ever a statute of the realm gave rise to legal conundrums it is the Workmen's Compensation Act, and every decision in it in regard to the height of buildings shows most clearly what gross injustice it is to allow this limitation to remain in force. Had it happened that there had in the instance under notice been no party wall, it is obvious there would not have been any ground for the allowance of compensation; as it was the workman benefited by the fact that a bit, and a bit only, of the building of the requisite height was still in existence. It is equally obvious that, in the demolition of a building, a workman may be injured at two o'clock in the afternoon, when the building just exceeds 30 ft., and be entitled to compensation; at half-past two the same thing may occur, but as by this time some rows of bricks have been knocked off the walls the injured man is not entitled to a farthing.

In the same case a point of no little importance in these days, when old buildings have to give place to new, was also decided. Messrs. Cubitt had entered into a contract to demolish and rebuild some premises, and for the former purpose they employed an independent contractor, a house-breaker. The workman was employed by the latter, and not by Messrs. Cubitt, and the point was whether or not they were liable for the injury to the workman. We confess that we should have thought the point was clear enough. The first contractor is liable for sub-contracts, says the Act, unless the work done by the sub-contractor is "merely ancillary or incidental to and is no part of, or process in, the trade or business carried on by such undertaker." Clearly, if a firm undertakes to demolish and rebuild a house, the demolition is a substantial part of the contract. Here, again, the Act is not altogether just, because the line between what is and what is not ancillary to the contract entered into may be extraordinarily narrow.

Some decisions on the mode of estimating the compensation due to workmen who have been injured must now be noted. They have considerable bearing on the case of irregular employment. In Wheale *v.* the Rhymney Iron Company there was no regular contract of employment, but the man injured was engaged to work on a Wednesday, and continued to work every day, including Sunday, until the following Wednesday. The County Court judge took the average weekly earnings as being six times his daily pay, but it was urged by the employers that he should have taken half that sum, since the workman had not worked two full weeks, and therefore that the sum he had earned per day should be spread over two weeks. But the Court of Appeal agreed with the County Court judge; the man had worked for eight days, and therefore the rate per day was sufficient basis by which to arrive at the amount of compensation which, by the Schedule to the Act, in the case of a workman employed for less than three years was to be 156 times his average weekly earnings. In Bartlett *v.* Sutton the man who met with the accident had only worked for one day for the same employer. He was a casual labourer, and there was no evidence that he would have continued longer in the same engagement, though there was, perhaps, a possibility of it. In this case the Court took the single day as the basis of the average weekly wage in the employment of the same employer. This seems to be not altogther a fair average, because unquestionably most casual labourers would gain more in a week than a day's wage. But the Act is only an imperfect means of arriving at a standard of compensation—a rough and ready measure at the best, and if in such a case it is hard upon the workman, it might if more liberally construed be unjust in other cases to the employer.

This selection from the new decisions of the Court of Appeal includes those which are of most importance to the readers of this journal, and from them it will be obvious how desirable it had become that the appeals waiting for decision should be speedily dealt with by the Court.

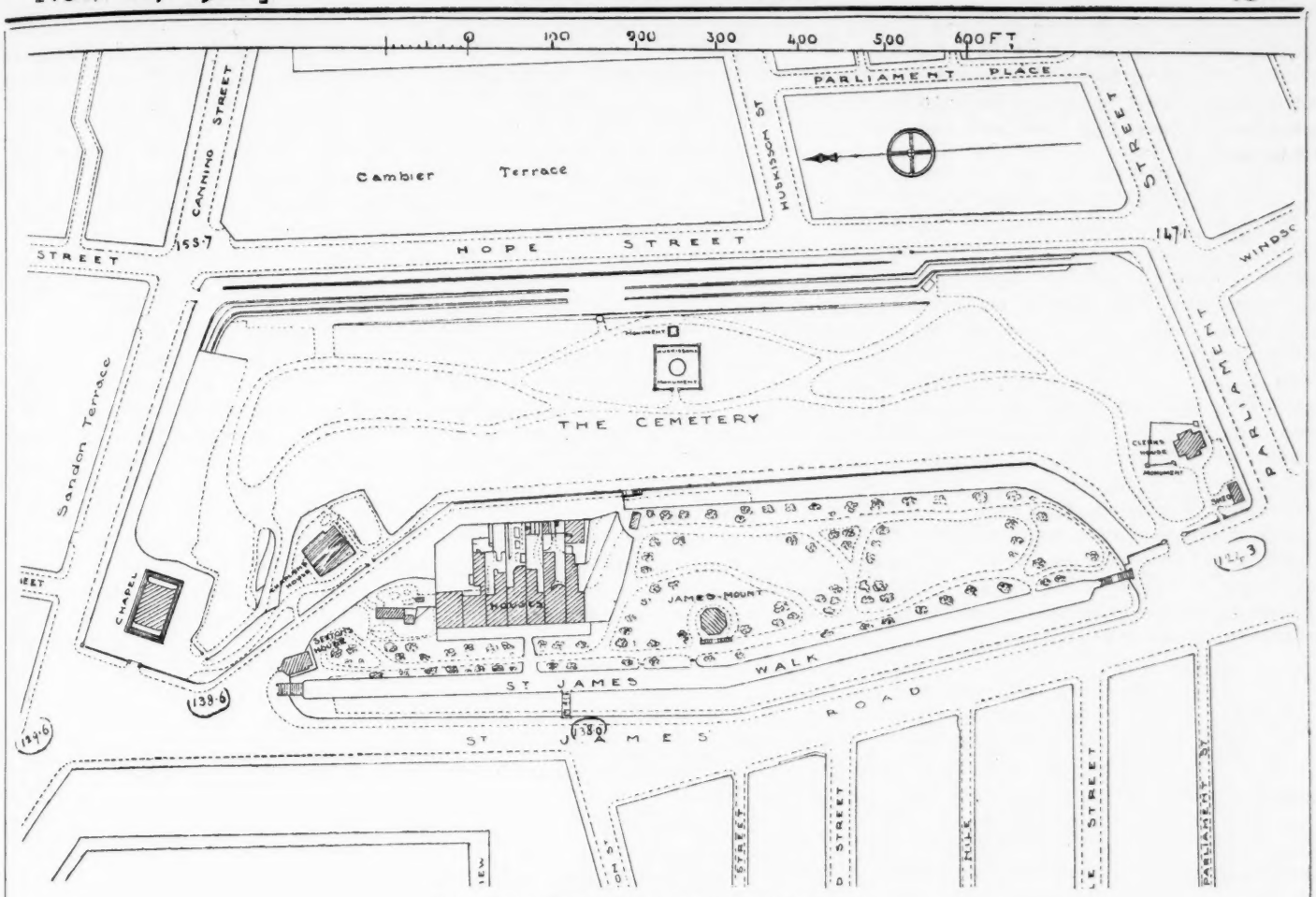
NOTES.

Liverpool Cathedral.

WE give at the head of the next page a plan of what is called the St. James's Mount site proposed for the Liverpool Cathedral, though we may observe that there appears still to be no certain information as to what portion of this ground is really intended as the site of the Cathedral. From what has come out, informally, as to the ideas of the Committee, we may assume that the original proposal was to place the Cathedral on the portion of the ground which is called St. James's Mount, and which is here shown laid out as a garden. That site would have necessitated the placing the longer axis of the Cathedral north and south instead of east and west; and even then the width of the site is only just sufficient for the average measurement across the transepts of our English cathedrals. We do not regard the north and south alignment as a serious objection in itself, as, after all the east and west position has been only uniformly observed in England, and has not been a general rule in Christian churches elsewhere. If, however, the east and west alignment is desired, for the sake of uniformity with English practice, it is obvious that the choir must be built over ground which is now a cemetery, and monuments and graves must be disturbed to do this, which seems exceedingly undesirable. It may be added that the cemetery is formed at the bottom of an ancient quarry, and that there is a sheer drop of sixty or eighty feet, or thereabouts, between the level of the "Mount" and that of the cemetery. The plan serves to show how completely the site is devoid of any opportunity of central approach and vista; for a cathedral, in fact, it is what can only be called a hole-and-corner site. Mr. Myddelton Shallcross, a Liverpool architect who has already written forcibly on the subject, had an excellent letter in Tuesday's *Times* pointing out again the unsatisfactory nature of this site, and urging the Committee to take up what is called the London-road site, which has our strong approval and that of the Liverpool Architectural Society. This was followed however on Wednesday by a letter from Sir W. Forwood, as representing the Committee, stating that it was no use unsettling the minds of competitors by advocating another site, as the site had been definitely fixed at St. James's Mount and the levels were being taken. The fact of the levels having been taken, however, does not commit them to anything but the surveyor's fee, and we hope they will still reconsider their unwise decision, and abandon a site which, for the purpose of a large cathedral, may be said to have been condemned by the whole architectural profession.

Electrical Engineering in Germany.

IN a paper read this week to the Dublin local section of the Institution of Electrical Engineers by Mr. P. S. Sheardown an instructive account is given of the official visit by many members of the Institution to Germany last summer. What seems to have impressed English electricians most was the absence of crowding in German engineering works. The rooms were spacious, lofty, excellently lighted, well ventilated, and kept scrupulously clean. Many of the companies provided "Kasinos" for their workmen, which contain reading-rooms, dining-



Plan of Site Proposed for Liverpool Cathedral.

rooms, bathrooms, &c., and where weekly lectures on scientific subjects were given by members of the staff and others. Another point which impressed the visitors was the almost entire absence of belts and shafting, the machines being nearly always driven by electric motors. This enables the lighting of the workshops to be done efficiently and economically by means of inverted arc lamps, the light being reflected from the ceiling into the room. Mr. Sheardown visited the high-speed electric railway which has been constructed between Berlin and Zossen for military purposes. He incidentally mentions that the electric motors make an alarming "purring" noise. Polyphase working seems to have made immense progress in Germany during the last five years. We think that this is mainly due to the very superior mathematical training given to the German electrician, which enables him to utilise the extraordinary adaptability of this system of working to all manner of practical problems. The visit to the Technical High School at Charlottenburg was most instructive. The complete and thoroughly up-to-date equipment of the school took English electricians by surprise. We are accustomed in this country to let students experiment with any antiquated dynamo, and to make measurements as best they can with old ammeters and voltmeters. It was a revelation to see students attaining an accuracy in their measurements which would more than satisfy practical requirements. Dr. Slaby, the principal of this school, has developed a system of wireless telegraphy which is rivalling the Marconi system, and Professor Josse, one of his colleagues, has shown that it is possible to get 30 per cent. more work from the "waste heat" of a steam engine by utilising it to work an auxiliary engine whose working substance is sulphur di-oxide.

"Burned by Retail."

UNDER this heading Mr. Blashill wrote a short letter to the *Times* last week commenting on the number of instances in which a death or deaths from fire occurred in the case of persons living over a shop filled with specially combustible materials. Mr. Blashill suggests that these minor cases of loss of life by fire, and the circumstances under which they occur, are not sufficiently considered, and that there ought to be legislation to the effect that the first floor of such houses should be compulsorily constructed so as to be so far fire-resisting as at least to give time for the fire-brigade to reach the spot before the fire had got so far as to render escape from the upper stories impossible. He adds "I should like to see any responsible person oppose an Act for bringing this about within five years." We quite agree with him.

The Thames as a Highway.

AN address on "The Thames: its Tributaries, Banks, and Bridges," was delivered by Mr. Charles Welch on Thursday last week at the London Institution. The lecturer had little or nothing new to say, but, with the aid of excellent lantern views, he gave an interesting account of the river and the principal objects of interest associated with it, the survey actually extending from the source of the river to Gravesend. Perhaps the most interesting and useful part of the address was the description of the river as a grand highway in former times, and of the use the Court and Corporation made of it on occasions of public processions. He might have alluded to the possibility of the river being again used on such occasions, to say nothing of its more general use for purposes of every-day transit, for there appears to be no satisfactory reason why the Thames should not be used more than it is as a highway; and at a time when so much attention is being given to the subject of transit in London, it seems extraordinary that something is not done to make better use of the river. Why should not the Lord Mayor's Show, for instance, proceed along the Thames from London Bridge to Westminster, returning by way of the Embankment? There is plenty of space on the Embankment for sightseers, while, if this suggestion were adopted, many of the streets in which traffic is stopped or disorganised on such occasions would not be affected.

Hogarth's House, Chiswick.

IN a "Note" on May 18 last we announced that a committee had been formed for raising a sum of about 1,500*l.* wherewith to rescue the house in Chiswick-lane from destruction, and to preserve it as a Hogarth Memorial and Museum. We observe that the property, which is copyhold and has about half an acre of garden, will be offered for sale at the Mart on November 25 current. We published an illustration of the house in our number of February 8, 1890. Hogarth bought it in or about 1750, and occupied it as a summer residence until his death on October 26, 1774, in Leicester-fields, leaving it to his widow, who demised it to her relative Mrs. Mary Lewis, who died in 1808; it then passed to some persons named in Mrs. Hogarth's will. The house was subsequently tenanted by Henry Cary, the translator of Dante. It was built in the earlier years of the eighteenth century of red stock brick, with rubbed brick dressings; on the first floor in the north and principal front is a bold wooden bay window, and it has a moulded wooden eaves-course. It is said that Hogarth planted the mulberry tree and that Garrick gave him the two leaden urns upon the gateposts. In 1890 the house—which had been not well cared for and let out in tenements—was taken by

the Typographic Etching Co. for the Hogarth Works. It is to be hoped that, even at the eleventh hour, some means may be found to purchase this interesting house and save it for the nation.

Palace-gate, Kensington.

By direction of the late Sir John Millais' trustees, No. 2, Palace-gate will shortly be offered for sale at auction. The property has a frontage of about 80 ft. on the east side of the road, and occupies an area of about 7,400 ft. The house was built for Sir John Millais, P.R.A., on a plot of ground which he bought from Messrs. Cubitt & Co., who built it for him, after the plans and designs of P. C. Hardwick: it is illustrated in the *Builder* of June 10, 1876. The entrance hall measures 29 ft. by 26 ft.; on the first floor landing is a fountain by Sir Edgar Boehm, and on the first floor is the studio, 56 ft. by 49 ft., and 24 ft. high. The design is after the Italian style, carried out in red brick, with dressings of Portland stone.

Church of All Hallows-on-the-Wall, London.

On Thursday last week, at a sitting of the Consistory Court of London, Dr. Tristram, K.C., Chancellor of the Diocese, agreed to grant a faculty, after a novel kind, in respect of this church. The Rector and Churchwardens applied for powers enabling them to provide increased accommodation for the celebration of morning service for men who arrive at Broad-street and Liverpool-street stations by workmen's early trains, yet must wait an hour or longer before they can begin their work. During some while past about 200 women and girls have attended the early services in the church, which has sitting room for 184 persons, and a tent for men has been fitted up in the churchyard for congregations of about eighty men. The proposed building, which will cost about 1,000*l.*, is to be erected at the east end of, and will communicate with, the church. All Hallows was built in 1765-7, at a cost of 2,941*l.*, after the designs of George Dance the younger, and contains a monument, with bust, of John Patience, architect, and a copy of P. da Cortona's picture of Ananias restoring sight to Paul, which Sir N. Dance painted and presented as an altar-piece. Of the former church we published, on April 25, 1885, a view taken from the series of engravings published by R. West and W. H. Toms—the view being engraved by Toms after a drawing by R. West, 1736, together with Toms's account, which he manifestly copied *verbatim* from Hatton's "New View" of 1708. The present fabric was thoroughly renovated at a cost of about 1,700*l.* in 1897-8 by the late Sir Arthur Blomfield. In 1894-5 the Metropolitan Public Gardens Association laid out the churchyard that abuts against a piece of the old City wall which separates it from the gardens of some houses in New Broad-street; the Vestry, it is said, stands upon a bastion of the wall.

A Vitreous Fresco Process.

Messrs. Simpson & Sons, the well-known firm of decorators, have produced what they claim to be a permanent vitreous fresco decoration. The new material is an earthenware, upon which the fresco painting is made and fused in by a burning process. This vitreous earthenware is prepared in slabs about 8 in. square, $\frac{3}{4}$ of an inch thick. The surface is capable of various texture, the roughest surface being used for draperies and backgrounds, and smoother faced pieces are used for the flesh and more delicate draperies. The material is cut into shapes following as far as possible the lines of the design, as in the case of a leaded light window. The back of the material is roughed as a key for the cement, by which the whole is fixed in position, forming a concrete mass with the brickwork or other building material to which it is attached. Messrs. Simpson & Sons say that it is only half as costly as mosaic, and claim that it does not hold the dust and soot as mosaic does when used in this country. That is reasonable. The life of mosaic depends not merely on the material and design, but on the pieces being on varied planes and at different angles, which gives a rugged surface that will hold any amount of dirt. There is room for Messrs. Simpson's experiment, whether under the title of fresco or colour decoration. We imagine the process itself is more akin to the Della Robbia earthenware, without the glossy glaze, than to fresco painting, which mellows with age. With such a permanent material none but the most accomplished decorative artists should be allowed to perpetuate their work.

The New English Art Club.

The exhibition of the New English Art Club includes among its eccentricities a few very interesting and powerful studies in style, in landscape especially. Mr. Muirhead's "The Water Mill" (100) has a touch of Constable about it; Professor Brown's "Woolhampton" (90) seems rather like a new application of the method of Diaz; Mr. W. H. Bell's "The Pond—Early Spring" (103) is a bright sketch full of light; Mr. Wilson Steer's "The Grove" (116) a good sketch of the effect of light through foliage; Mr. W. W. Russell's "Chepstow" (127) is a fine landscape in every sense; Mr. Sims has got a powerful effect of storm in the interrupted picnic (133), and Miss Alice Fanner shows her usual fine open-air effect in "Breezy Day on a Farm Datchett" (142). Mr. Orpen paints two interiors with the same not very beautiful young woman inhabiting them—"A Window in a London Street" (69) and "The Window Seat" (130); unfinished interiors, but treated with originality and effect. Architecture suffers badly at the hands of some of the members; Mr. Walter Sickert's "St. Jacques" (125) appears to be a building constructed of mud; in Mr. Bernard Sickert's "Groote Kerk, Dordrecht" (122), the tower is not upright; and Mr. Brabazon asks us to accept shapeless splashes of colour at all angles as buildings. In contrast to these Mr. MacColl's "Belfry and Watch-tower of Calais" (5) is a good little architectural picture; so is Mr. Fry's "Chantilly" (54). The best picture in the whole collection is perhaps Mr. Walter Osborne's "The Lustre Jug" (77), a sketchy interior with figures and bric-à-brac which shows great power in its way.

The Modern Gallery.

At the Modern Gallery there is a collection of water-colour drawings by Mr. Herbert J. Finn, whose architectural pictures we have noticed before at this gallery; in this case the collection is diversified by a good many sketches and studies of landscape. From an architect's point of view, as we have before suggested, Mr. Finn treats cathedrals too much in the spirit of a landscape-painter; their degree of surface decay is in many cases exaggerated for the sake of picturesque effect. This is the case in nearly all the studies of Lincoln Cathedral, the greater part of which is, in fact, in remarkably good preservation considering its age. The large view of "Durham Cathedral — Evening" (52) has not this defect, and is a very fine work both in colour and composition. "Durham Cathedral—Morning" (62) is a morning mist effect with the towers reduced to silhouettes; the effect is finely rendered, but the towers are too lofty in proportion, the centre one especially. The west front of Ely is shown with the south turret very much out of perpendicular, leaning away from the centre; we do not recollect any such marked settlement as is shown here, nor is there any indication of it in a photograph which we have before us; at all events we should think it is exaggerated. The west front of York Minster, again, is much cleaner and sharper in line, all except the lowest portion, than is here shown. This kind of picturesque treatment of buildings is probably the most pleasing to painters, but it does not satisfy architects. All the drawings from Winfield Manor, in making which the artist seems to have been in a more architectural mood, are satisfactory in this respect, and show a good and solid masonry texture; "The Crypt, Winfield" (51) is especially good. We were much interested in Mr. Finn's landscape sketches, which, though slight, and apparently done for the sake of a diversion from his architectural pictures, show so much feeling for colour and effect in landscape that we would suggest that he would do well to give more of his time and ability to this class of subject.

Society of British Artists.

The exhibition of the Society of British Artists in Suffolk-street presents, as usual, a melancholy superficies of artistic commonplaces; but there are a few works worth picking out from their surroundings. Among these is Mr. Foweraker's "Exeter Quay" (100), a fine work both in colour and composition. Among other pleasing landscapes are Mr. Walter Fowler's "Early Autumn" (8) and "On the Norfolk Marshes" (103), and various small landscapes by Mr. Val Davis (35), Mr. J. E. Jacobs (48), Mr. Westley Manning (45), Mr. A. E. Proctor (64), Mr. F. Spenlove-Spenlove (99 and 226), and Mr. Whitehead (118). Mr. Foottet's "Pont Neuf, Paris" (112), seen under a special effect of light, is clever, though looking rather like a stage effect than a genuine one. Mr. R. C. Bunny has aimed at something higher in his figure-picture under "L'Age d'Or" (67), there is a fine sense of colour in this, though it rather suggests an attempt to imitate Mr. G. F. Watts. The President (Sir Wyke Bayliss) exhibits, as usual, some highly-wrought interiors of cathedrals—"Malines" (81) and "Interior of the Duomo Pisa" (265), and there is also an able painting of the interior of "S. Sophia, Constantinople" (328), by Mr. Henderson, whose illustrations of S. Sophia in our pages will be remembered by some of our readers. The screen of small sketches by Mr. Lenfestey is of considerable interest.

Messrs. Dowdeswell's Gallery.

At Messrs. Dowdeswell's Gallery in New Bond-street is to be seen, under the circumstances of artificial lighting apparently considered appropriate for religious pictures, M. Eugène Burnand's large painting, "Christ's Prayer after the Last Supper"—a fine and serious work which does not stand in need of any such adventitious aid to its effect. The scheme of colour is somewhat conventional, the artist having evidently aimed at keeping all the costumes and surroundings nearly colourless in order to concentrate the effect on the heads of Christ and the apostles; there is a white wall behind, its surface only broken by a shallow wall arcade, and the white tablecloth in front, the line of the table cutting level across the centre of the picture, the remains of the supper being all removed so as to leave no disturbing detail. The contrivance is a little too obvious and gives the scene the air of being rather symbolic than real; but perhaps this was the intention. The figure of Christ, facing the spectator in the centre, is treated with sculpturesque severity, the drapery falling in straight vertical lines; those of the eleven apostles (for this of course is after the disappearance of Judas) fall into more variety of line and pose, contrasting with the central figure. The apostles' heads are a series of very interesting studies, full of force and character; that of Christ is of the usually accepted type, and is solemn and spiritual in expression. Altogether this impresses one as a religious picture painted with sincerity and seriousness of aim; a picture better suited, it is true, to the church than to the picture-gallery; but is not that exactly the feeling which a painting of such a subject should suggest?

EGYPT EXPLORATION FUND:

GENERAL MEETING OF MEMBERS.

The fifteenth ordinary general meeting of the Council and members of the Egypt Exploration Fund was held at the Society of Antiquaries, Burlington House, on Thursday evening, 7th inst., Sir John Evans, the President, in the chair.

The Rev. R. A. Bullen proposed the re-election of the members of the Committee, the only change being the substitution of the name of Mr. Herbert Thompson for that of Sir Hermann Weber, M.D.

This was seconded by Mr. Sewell and adopted.

Mr. J. S. Cotton and the Rev. W. C. Winslow (Boston, U.S.A.) were re-elected hon. secretaries, and Messrs. H. A. Grueber, F.S.A., and F. C. Foster (Boston, U.S.A.) hon. treasurers.

The Hon. Treasurer then read his Report, which showed that the financial position of the Fund was much better than last year. It was mentioned in the first instance that the affiliated branch at New York had ceased to exist; but this loss was more than compensated by a new branch which had been established at Pittsburg, and from which they had received large contributions. As to the Exploration Fund, the total disbursements had been 2,351*l.* 1s. 8d., made up as follows:—1. By the expedition account, 1,443*l.* 2s. 10d., being the amount incurred on the work done at Abydos under Professor Petrie. 2. By publications they had spent 366*l.* 15s. 11d., which included, besides the proportioned charges for the Archæological and Annual Reports, the remaining outlay on "Dendereh and the Royal Tombs," vol. i., and on the extra volume, "Diospolis Parva," by Professor Petrie, &c. 3. Various other items of expenditure which were stated. The total receipts over the same period had been 3,788*l.* 11s. 8d., and they were able this year to carry over to their credit a balance of no less than 1,437*l.* 10s., even after providing for the deficiency of 181*l.* 15s. 3d. of last year. In the archæological survey the total disbursements during 1900-1901 had been 523*l.* 8s. 5d., and the receipts 723*l.* 0s. 4d. In the Græco-Roman branch the payments had amounted to 1,016*l.* 16s. 8d., of which 459*l.* 19s. 4d. was devoted to the expedition account, which included the excavations conducted by Mr. Grenfell and Mr. Hunt at Rubbyyat; and the receipts of the branch over the same period were 1,170*l.* 15s. 10d. Last year there was a considerable falling off in subscriptions, but this year they had recovered their position, for those in England showed a considerable advance, while those from America were more than doubled.

The President then read a short address. He commenced by referring to the losses the Fund had sustained by the death of Sir Greville Smyth, of Ashton Court, near Bristol, who was for many years a subscriber to the Exploration Fund; Mr. Arthur Cates, the well-known architect and architectural adviser to the Woods and Forests, who took a warm interest in the study of antiquity; and Mr. Joseph John Tylor, the eldest son of the late Mr. Alfred Tylor, F.G.S., who forty years ago was busily occupied with the discovery of flint implements fashioned by the hand of man in the gravels of the river Somme, near Amiens. Mr. Tylor's acquaintance with Egypt originated in a visit to that country in pursuit of health, but he soon became absorbed in the interest of carrying on excavations, and one of his principal aims was to obtain and preserve absolutely accurate reproductions of wall-paintings and hieroglyphic inscriptions on Egyptian monuments; and as a means towards this end he combined the use of photography with careful finishing by the hand and brush. It has been said of his series of the "Wall Drawings and Monuments of El Keb," published from 1895 to 1900, that they present as near an approach to absolute reproduction, even to the texture of the material represented, as has ever been attained. Referring to the scene of their operations during the past season, he observed that by the presence of re-used vases, and by the style of the sealings, Professor Petrie had succeeded in placing the tombs of the kings in a fairly trustworthy chronological sequence. The share of the spoil which was allowed to come to England was, in accordance with former precedents, exhibited during the month of July at University College, to the authorities of which they were much indebted, and also to the Museum authorities at Cairo for the equitable—if not, indeed, liberal—manner in which the produce of the excavations had been divided. Among the objects retained at Cairo were the four remarkable and artistic bracelets, of which coloured representations were given in the frontispiece to their volume. Their history was romantic. It would seem as if at a time when the tomb was anciently plundered the mummy of the queen of Zer or Teta, the second King of the First Dynasty, was broken in pieces, and a fragment of the forearm placed by one of the plunderers in a hole in the wall. For more than 1,000 years offerings were made at the Osiris shrine into which the tomb had been converted in the days of Amen-hetep III., and thousands of visitors must have passed within a few feet of the fragment, but without disturbing it. The Copts destroyed the shrine, and the *Mission Amélineau* cleared the tomb, but still the arm lay untouched; but at last it came under the notice of Professor Flinders Petrie's workmen, and was brought to him, the bandages carefully removed and the bracelets brought to light. They were probably the earliest examples of female jewellery known, dating back as they seem to do to about 4,700 years before Christ. Among the objects exhibited in London might be mentioned the sceptre and the gold-capped marble vases of the seventh and last king of the Eleventh Dynasty, dating from about 4200 B.C. The sceptre was built up of pierced cylinders of card placed upon a central core of copper and had originally been at least 26 in. in length. A large stele of Fer-ab-sen had gone to the British Museum and a curved bar of gold with the name of Aha to Chicago. The whole collection had now been divided mainly between the United Kingdom, including her Colonies and the United States of America, but portions had also been assigned to some European States, the principle of division adopted being that each country should, as far as possible, share *pro ratâ* in accordance with the amount that each had contributed to the Fund. In reference to Professor Petrie's work on "Diospolis Parva," he had one point of difference with the author as to describing the period of which he treated as the "Prehistoric Period." He would rather term it the "Pre-dynastic," and thus limit it to Egypt and connect it with dynastic times. To regard a single cemetery in Egypt as representing half the prehistoric period, and to devote only three-tenths of the whole period to the days when metal was not known—for copper implements come in at the beginning of the series—seemed to him to be absolutely in disaccordance with what we knew of the neolithic period in other parts of the world, and to be entirely out of proportion even when regarded from the Egyptian point of view. The term "pre-dynastic" got rid of all those difficulties. Another publication of the Fund, which would now shortly appear, was "The Temple of Deir El Bahari," No. IV., which would comprise plates relating principally to the Temple of Hathor and the southern Hall of Offerings. The wall-paintings were of great interest, and the long religious texts subsequently incorporated into the Book of the Dead were worthy of notice, especially as Mr. Naville had offered a translation of one of them which somewhat differed from that of other authorities. The archæologieal survey had during the past year produced two volumes, one of which, however, was only on the point of being issued. The first of these was Ptah-hetep, Part II. The second was a detailed account of the Rock Tombs of Sheik Said, prepared by Mr. M. de Garis Davies. The tombs, according to the list, were 102 in number, and belonged in the main to the ancient kingdom. The memoir was illustrated by thirty-four plates, and would be found full of archæological information. With regard to the Græco-Roman branch, the Report was less satisfactory, though the volume of Fayoum papyri had for some time been in the hands of subscribers. The study of papyri required both time and daylight, and he feared that Messrs. Grenfell and Hunt had during the past year undertaken tasks for which these two necessaries hardly sufficed. The examination and publication of Lord Amherst of Hackney's fine collection was a grave undertaking, and the editors were to be congratulated on the completion of their work. When, however, they undertook for Mrs. Hearst, of California, the editing of the Ptolemaic papyri, the time left at their disposal for the work of the Græco-Roman branch was fearfully curtailed, and but little could be done. It was hoped that an arrangement could be made by which a copy of this volume would be sent to each subscriber to the branch in lieu of the ordinary annual volume, or possibly of two; and if the papyri were of the character which he had heard assigned to them, he believed that they would have reason to be satisfied with the arrangement. Mr. Grenfell informed him that the papyri came from the cases of mummies of crocodiles, and that many of them were of extremely large size and well preserved. They all belonged to the period between B.C. 130 and 80, and were for the internal history of Egypt of great importance. The most remarkable, perhaps, constituted a series of forty-five decrees of Ptolemy Euergates II. on a great variety of subjects. Official documents of all kinds were strongly represented, the source of a large proportion of the papyri having apparently been the bureau of the village scribe, who also kept the official archives of the place. Among literary fragments there were portions of two or three anthologies, including part of a chorus of a tragedy dealing with Iphigenia. A special feature of interest was that these documents formed a sort of pendant to the Petrie papyri, and carried on the history of the military colony in the Fayoum to its later developments. *Inter alia*, they went far to solve some of the most vexed questions with regard to Ptolemaic numismatics. The address concluded with a few remarks on the present position and hopeful future prospects of Egyptian archæology.

The Hon. Secretary, Mr. J. S. Cotton, then read his Report, inwhich he observed that from an administrative point of view the chief feature of the past year had been the strengthening of their connexion with the United States. The two old affiliated branches of Philadelphia and Chicago were now both represented on the Committee by Americans—Major Cassatt, Military Attaché at the Embassy, and Mr. Louis Dyer, who was as well known at Oxford as at his original University of Harvard. From the Boston office they had received this year the equivalent of 10,000 dols., instead of 6,000 dols. last year. It must always be borne in mind that these liberal contributions from America

were frankly sent in view of a return in the form of antiquities and papyri for American museums and libraries. In accordance with their rule of following strictly the proportion of local contributions, the American share had been divided between five great museums—at New York, Boston, Philadelphia, Pittsburg, and Chicago.

Professor Petrie then read the following address :—

"This year we have the satisfaction of completing the most important historical work that had yet come into our hands. The continuous order of seventeen kings has been established, and the very foundations of Egyptian history have been settled in a manner which has hitherto seemed entirely beyond hope. The Royal cemetery of the tombs of the Kings at Thebes, belonging to the Eighteenth-Nineteenth Dynasties, and that of the pyramid-builders at Memphis of the Fourth-Sixth Dynasties, are the only series of Royal tombs yet known, and neither of those had added anything to the history, which was already fixed by other monuments. But the recovery of the Royal tombs of the earliest dynasties has given us not only another Royal cemetery, but has provided the only contemporary history of their time, and completely vindicated the historical character of the lists which had been preserved by later ages. The criticism of myths had told us that Mena, the founder of the Egyptian monarchy, was but a form of Manu, the lawgiver of India, and of Minos, the hero of Crete ; and to hope for tangible monuments of his time was but seeing castles in cloudland. Now the long line of a dozen kings back to Mena is clear before us ; we have seen and handled the gold, the crystal, the ivory, with his name and engravings, and even the kings who went before him are better known to us by actual objects than are half the Saxon kings of England. No such complete materialisation of history has been obtained at one stroke from any other country or age. And such a result was least to be expected from ground which had been pronounced exhausted, the last clearance of which unhappily had just been made before our work there. That previous clearance has not restored a single detail of the succession of the names, nor identified the historical position of a single king. It has only swept away the greater part of the materials, and left a chaos of destruction behind it. The whole of what we have covered by our work was from the overlooked residue which had escaped all the plunderers ; that invisible margin was the total of what we had to use, and that, a hundredth of all that had existed there, has sufficed to reconstruct the historic fabric. So difficult is it to really destroy history that we may now say that our methods—which will doubtless be improved—can resuscitate knowledge of a period of which the remains have been destroyed time after time by zeal and greed. By the use of a trained body of workmen, who had been taught in past years to notice and preserve the objects in their work, we recovered a far larger amount of material than we had hoped for. The splendid bracelets of gold and jewels, the gold bar of Mena, the gold sceptre, the gold-capped vases, were beyond all expectation ; and the more instructive remains include about twenty engraved tablets and dozens of fragments, five Royal tombstones and 150 private tombstones, over 200 different sealings, nearly 100 inscriptions on stone vases, 800 stone vases restored, and many hundred of small objects of the greatest interest as illustrating the civilisation. Altogether, in the two volumes issued to you there are over 500 photographs, over 2,000 drawings, and nearly 2,000 marks, besides the full and detailed plans and sections of the whole of the tombs. None of this mass of material, which alone has enabled us to restore the earliest dynasties, would ever have been known had we been content to leave the subject where the common routine of excavation had already abandoned it. You see before you on the largest scale an object-lesson on the futility and destructiveness of a mode of work which was no worse than the greater part of what has been perpetrated in Egypt in the name of excavations during the last hundred years. Now there awaits us yet the great temple site of Abydos, the ground of the earliest temple, that of Osiris. It has been largely dug over for earth, and some monuments have been removed, but the lower levels of it are yet untouched. It seems that this was probably the burial-place of the head of Osiris, the great relic which drew around it the burials of the historic times, and probably also was surrounded by those of the earliest dynasties, as one such grave has been found there by accident. The site is a very large one, about 500 ft. by 1,000 ft., or three times the size of the whole of Trafalgar-square and its roads, and it will have to be turned over 12 ft. deep. If we get a third of that, or as much as Trafalgar-square, turned over in the course of a season, that will be as much as one can expect, so that some three years will be occupied in undertaking this great site. It is in that ground that we may hope to find tombs of the earliest historic time, and carvings in stone and ivory of the primitive kings, like those from Hierakonopolis. Our treasurer must appeal to you to ensure that this most promising site of all Egypt is thoroughly and finally explored. It is now twenty-one years since I first began work in Egypt ; Mariette then ruled, and this Fund was yet unborn. In those days the Pyramid of Khufu was our boundary of history ; nothing whatever was known of the archæology of Egypt as a comparative science, and no trace of Europe in Egypt was thought of, earlier than the Ptolemies. The situation now is completely different. The monumental history has been carried back to the very beginning of the written record, which has been entirely confirmed ; and, beyond all that, the whole course of the prehistoric civilisation has been mapped out for perhaps 2,000 years more completely than has been done for such ages in any other land. The archæology is better known than that of the most familiar countries ; not a vase or a bead, not an ornament or a carving, but what falls into place with known examples, and can be closely dated. The connexion with Europe has been led back to the beginning of Greek records, then to the Mycenæan times, next to the Twelfth Dynasty, and now even to the First Dynasty, and Egypt is the sounding line for the unmeasured abysses of European history. No such opening of new fields to the mind has come to pass since the days when the Renaissance scholars burst into the world of lost Classic authors ; even the surprising unfolding of Assyria and Babylonia lacks the historic completion of the Egyptian record, and is still almost untouched in its archæology and development. We cannot expect the next twenty-one years to be as potent as that which we have seen, for the great outlines are now laid down ; but many a dim passage in the long course of the history yet awaits the light, and it will be the duty of the new century to fill in, as far as possible, the details of the picture which has been sketched in the last few years."

The Chairman expressed the thanks of the meeting to Professor Petrie for his very able and interesting address, and remarked that no one had done so much for England to unravel Egyptian history as he had. He congratulated the Professor on the great success he had achieved at Abydos. The work he was about to undertake would not be completed for three years, and he wished him success.

The vote having been accorded, Judge Baylis proposed a vote of thanks to the chairman, remarking that he was glad that the Fund realised what great services he was rendering to them by accepting the presidency.

Mr. D. Hogarth seconded, and expressed a hope that the explorations would be continued in the Delta of Egypt.

The Chairman, replying, remarked that the discoveries in Egypt were very important, and he was greatly interested in the movement. He was glad to find the finances in such a healthy condition, and he had no doubt that the result of the next few years' inquiry by Professor Petrie would yield valuable information.

This concluded the meeting.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.—The usual meeting of this Society was held on Friday evening, the 8th inst., Mr. James McKissack, President, in the chair. Papers were read by Messrs. Robt. Stuart and D. S. Pringle on Soft Woods and Hard Woods respectively. Each essayist described the growing timber and its conversion into various market forms, with descriptions of many of the trees of each respective class. Such points as the relative durability and prices of timbers, and the suitability and adaptation of these to various works, were discussed by the members, whose thanks were conveyed to the lecturers for their instructive and eminently practical papers.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

THE second meeting of the present session of the Discussion Section of the Architectural Association was held at 56, Great Marlborough-street, W., on Friday, the 8th inst., at 7.30 p.m.

Mr. R. H. Weymouth was in the chair, supported by the hon. secs., Messrs. J. H. Pearson and H. Gregory Collins. There was a good attendance, and the book was signed by twenty-one members and ten visitors. Several questions were asked during question time and replied to by members.

The Chairman then called upon Mr. W. E. Davis to read a paper entitled "The Finishing of a Dwelling-House," which dealt, in a practical and interesting manner, with the many difficulties which beset the path of the architect, and which is printed nearly in full below.

The discussion was opened by Mr. H. P. Maule, who proposed a vote of thanks to the author, which was seconded by Mr. Lishman, and the discussion was carried on in a hearty manner by Messrs. Greenop, Geoffrey Lucas, J. H. Pearson, L. Hunt, Max Clarke, and the Chairman.

The Special Visitor, Mr. Walter J. Millard, was then asked by the Chairman to sum up the discussion which had resulted from such an excellent paper.

Mr. Millard said the subject had been treated in a very exhaustive manner. He quite agreed with all the remarks of the author that it was most important to give every attention to minor matters when planning the dwelling-house, and that it was necessary to show some forethought in matters of detail. We should combine the practical with the artistic, but, above all, he wished to impress upon the minds of the younger men the desirability of practising restraint in their work. It was essential that the cupboards and fittings should be designed by the architect, and that the client should be consulted in all matters.

A vote of thanks to Mr. Davis for his valuable and practical paper, and to Mr. Millard for so kindly attending as Special Visitor, also to Mr. Max Clarke and Mr. H. P. Maule, was passed with acclamation. Mr. Davis having replied, the meeting terminated. It was announced that the next meeting would be held on Friday, the 22nd inst., when Mr. G. H. Smith has promised to read a paper illustrated by lantern slides on "Canterbury Cathedral."

FINISHING A DWELLING-HOUSE.*

THERE are two persons to whom a man shows a most commendable modesty as to his financial position ; the opportunity in the one case recurs annually, and in the other not so frequently. The first individual is the Income-tax surveyor, the other his architect ; but, while in the latter case he is so modest as to his means (sometimes this display of modesty commences as early as arranging for special fees), when he comes to his requirements he throws modesty and every other virtue to the winds. The result is, that instructions having been given for the preparation of the drawings, the client frequently calls during their preparation and suggests that he wants this, that, and the other, and that his wife wishes for something else ; the architect unconsciously adding and adding, until the approximate estimate given at the commencement of negotiations would, upon a little consideration, look somewhat foolish. These approximate estimates are another source of trouble to the architect. He is generally expected to give an idea of the cost, "roughly, of course," says the client, at the same time making a very keen mental note of the amount, to be brought up later for the architect's discomfiture, when he, poor modest man, afraid of offending his patron, does not like to mention his (the patron's) liability for the extra cost. Of course I leave out of consideration those architects of whom I have heard, but with whom I have fortunately had few dealings, who purposely deceive their clients as to the probable cost of the work, hoping thus to commit them to something, and trusting to luck to get out of the hole they have got into by their dishonesty. These individuals are not worthy of our commiseration.

However, to return to the case under consideration. The drawings are prepared, and

* A paper read at the Discussion Section of the Architectural Association, on the 8th inst., by Mr. W. E. Davis.

som·times he specification, and if the architect is wise the quantities also—but not by the architect; as to this, I would refer you to the paper read here about twelve months ago by Mr. Buss. The tenders arrive and are opened; then follows the little speech that we know so well, "Thank you, gentlemen, for your tenders; they are all higher than I anticipated—in fact, considerably more than my client is prepared to spend." Later on comes the "cutting-down" stage, the detestable job hated by all. The architect is naturally anxious to get his job started, so that he sometimes lapses from that discretion that ought always to characterise an architect's actions. Be it said to his credit that he sacrifices himself upon the altar of economy, the first item in the reduction bill being his last hope of salvation at the final settlement of accounts—the provision for contingencies. Then comes those items which he persuades himself should be considered as furnishing, viz., cupboards and shelving, plate rack, hat and coat rails, and I have even known the kitchen dresser to go. Sometimes this is with the cognisance of the male half of the client, he suggesting that they have a number of old cupboards and shelves which they must use, &c., and so on. These remarks, I should explain, are in extenuation of the architect, lest it be considered that I am blaming him for lack of consideration of the requirements of the modern dwelling-house, when I know that he, of all men, is a creature of circumstance.

It being frequently the lot of the unfortunate surveyor to spend anything from days to weeks in a new house, during the early days of its occupation by the client and his family, for the purpose of dealing with that portion of his work known as E's and O's—more often than not there is a preponderance of the former—he generally gets a few candid opinions from the mistress of the house as to the shortcomings of the architect, with whom, for obvious reasons, he is anxious to keep upon the best of terms. It is, of course, the mistress of the house who claims—and rightly so—to be the supreme judge as to the household working of the establishment.

Sometimes the lady of the house raises various little points by putting conundrums, such as:—"How does Mr. So-and-so think we are going to clean the outside of those windows?" of which only one out of two or three lights are made to open, and that outwards. It certainly is a puzzle, and the only way that suggests itself to the unfortunate individual addressed is a ladder; but being a wise man, he does not offer this suggestion, and, thinking of his friend the architect, meekly remarks that "It is a little awkward." "A little?" replies the lady with emphasis and scorn, and then turns away with an expression that leaves you in little doubt, that in her opinion, you are as bad as the architect. Now this is only a comparatively small matter, but a very important one to a good housekeeper, and should be avoided by the architect, if he is desirous of being able to visit his clients, without being continually reminded of his weak points. The only way that occurs to me to avoid the trouble, except the rather doubtful benefit of making his casements to open inwards, is to make the whole of the lights of his windows in three lights or less to open. Personally, I think the old-fashioned (or must it be considered by comparison new?) sash and frame preferable on all points, especially the very important one of ventilation. For myself—and I do not think I am singular in this respect—I like to have my bedroom window always open at the top; but when it has been my misfortune to sleep in a room lighted by casements, I have had in cold weather reluctantly to forego this luxury. In the summer, too, I have had more than once to get up to close the window on account of the rain entering; so that, taking all things into account, for bedrooms especially, there is nothing to compare with the sash window for usefulness. Please bear in mind that this was to be a practical paper, and not an artistic one.

Another trouble, and another little conversation—"When we came here there was not a single cupboard or shelf in the place." The victim's mind recurs to the Reduction Bill, Item 2, "Omission of Cupboards and Shelving," Item 1 being "Omission of Provision for Contingencies." Now he is in a dilemma. The surveyor, being generally a much married man himself, dares not repeat the remarks of the master of the house when arranging the reductions. He therefore maintains a discreet silence; but, at the same time, it is painful to him to hear his friend and patron, the architect, roundly abused, when he knows that this abuse is not merited. He therefore decides to advise him not to omit these items in the future, unless authorised by the *mistress* of the house, if he wishes to keep a friend in that direction.

While upon the question of cupboards, there is that vexed topic, the dust trap, *alias* cupboard top; being out of sight, it is generally out of mind also, and, therefore, is not always so well finished as it might be, and the cornice being frequently fixed with its top edge slightly above the level of the cupboard top, makes it almost impossible to keep clean. It has often occurred to me that cupboards, in bedrooms at least, being generally fixed in the recesses at the sides of the chimney breast, it would be better to take the bull by the horns, and arch over the recess, building up solid above; the little loss of air space being more than compensated for by the absence of the dust trap. Kitchen cupboards may run up to the ceiling, for, being in constant use, the objection to the upper tiers of shelves does not obtain, but I do not think that anything over 7 ft. or 8 ft. is advisable in bedrooms.

Do not have wide doors to cupboards; two narrow folding-doors cause much less obstruction in a room than one wide single one. This is again a comparatively small point, but has been impressed upon me more than once, especially where space is limited.

Akin to the last is the question of hat and coat space. Get this, if possible; a space where the master can keep those aids to comfort which he uses when he throws off the polished glory of the city for the freedom of his own garden. This should be off the hall, but not in such a conspicuous position that it is the first object met with upon entering the house. A recess can generally be formed under the stairs if there is no basement, by leaving part of the space open, instead of enclosing it all as a cupboard. This is, of course, in addition to the usual hat and coat arrangement, where the silver-knobbed umbrellas, and the shiny top hat can be displayed without disgracing the family. I ought perhaps, here to explain, that I have generally taken something considerably less than a mansion in my examples, where comfort, rather than display, is the chief factor.

The question of ventilation, I doubt not all will agree, is one of the utmost importance, which, however, I am afraid, is not appreciated, except—to use an Hibernianism—when it is absent. Where an attempt has been made to deal with it, it is often attended with so much discomfort by the clattering of mica flaps, that we find them, sooner or later, papered over. Where this is not done, they are always conspicuous to the sight, as well as the hearing, by the black patch on the ceiling and wall around, notwithstanding the maker's assertion that they are smoke-proof. Moreover, the requirements of Building Acts, by which ventilators in smoke-flues are to be kept at least 12 in. below the ceiling, rob them of a great deal of their efficiency. The slight extra brickwork required for a separate vent-flue from each room, when silk flap ventilators close to the ceiling can be used, is a good investment, and nothing in my experience works better than a louvred grating in each side of the stack, just below the pot. As an inlet, my old friend the sash window is again to the fore, especially when fitted with the deep sill bead. With this we get as near that grand thing, "ventilation without draught," as is possible. Of course, I am aware that there are numerous inlet ventilators that work well, but they are all very unsightly, notwithstanding the makers' ingenious attempts to make them appear like everything but what they are, besides being somewhat expensive.

At the risk of bringing forward obvious points, I will again repeat those oft-repeated suggestions. In planning sitting-rooms so arrange the door and fireplace that it is possible to enjoy one's own fireside without feeling an icy thrill every time the door is opened. Again, in planning bedrooms, arrange the windows so that there is a position in the room for the bed, without the sleeper directly facing the light. Apart from the discomfort to a person in health, one only needs to have kept his bed for a time during illness to appreciate this. I am aware that the arrangement is sometimes very difficult to carry out, but as clients often observe, "What do we employ an architect for?" and it is by studying such points as these, that the architect makes or mars his work.

We have become so luxurious in these days that no house, however small, is considered complete without a serving hatch—a convenience, no doubt; but when, as is frequently the case, it is an opening from the kitchen leading directly into the dining-room, it is anything but an unalloyed blessing. Have a small lobby outside, if possible, but, in any event, have double shutters, both fastened from the dining-room side. In the first place, this reduces the annoyance from the smell of cooking, and in the second place prevents the passage of sound; and this in the case of a small house, where the dining has sometimes to answer as a sitting-room also, is important, as it is not always advisable that the conversation in the dining-room should be communicated to the kitchen, or, for that matter, vice versa.

We will now deal with one or two little matters connected with sanitation and water supply.

It has been my lot once or twice to stay at houses where everything has been right up to date—everything that it was possible to think of having been provided. One of these conveniences is a lavatory in every bedroom with hot and cold water laid on, with (and this is particularly appreciated by the maids) waste complete. It certainly is a convenience, but I have always taken care to see that the plug was in the waste before retiring, and I have grave doubts whether, convenient as it may be, a complete lavatory in a bedroom is desirable; that is, of course, as to the waste—the supplies there can be no question about. We all know the corroding properties of soap, how with the best arrangements the wastes are soon thickly coated. Those who paid a visit some years ago with the Architectural Association to the Ophthalmic Hospital, St. George's, will remember Professor McHardy's forcible, if not delicate, testimony as to its qualities. Now it seems to me that if the waste is left unplugged, this must have a deleterious effect upon the air of the room. I should like the opinion of members on this point, as, in fact, upon all the points I have raised.

As we are on the question of wastes, I would point out the necessity of keeping these large where soapy water is dealt with—2 in. at least. For one thing, it is much easier to run a cane down a 2-in. waste than a 1½-in., and I do not think the somewhat larger surface to coat need be considered, as with the large waste, the water passes through much quicker, which more than compensates for any anticipated trouble on that score.

It is comparatively useless to have a large waste pipe if the outlet from the basin is not of similar size; a 2-in. brass plug would, however, be a somewhat formidable thing if (and this does happen) it should be dropped into the basin; some makers supply them of india-rubber or vulcanite, which entirely overcomes this objection, and which work admirably.

The "plunger" bath waste is always, to my mind, unsatisfactory; and if any of you have taken one out, or have seen one taken out, you will, I am sure, agree with me. It is impossible to imagine in what a filthy state it can get in a very short time. How often do we find that the water in the bath lowers when the plunger is down; this, in the majority of cases, arises solely on account of the congealed soap. Nothing in my experience is so effective as the old fashioned plug and chain—unsightly, no doubt; but I would repeat this is to be essentially a practical paper.

Do not on any account omit the safes under the baths, water-closets, and cisterns; have marble under the former if you can run to it; if not have lead. The cost will be more than saved when the first accident happens, and accidents will happen, as most of us know to our cost.

The subject of baths leads us on to that of water heaters. There is not the slightest doubt that a hot-water system is the best, but with the great improvements in gas cooking apparatus (in small houses at least) the gas cooker more often than not, does duty for the kitchener in summer. I am here speaking of houses not large enough to have a special furnace for the hot water. If, then, we are to have a hot bath in the summer, we have either to fall back upon the much-maligned "geyser," or have the kitchener started for this purpose only. My experience with these much-abused articles has been entirely in their favour. I suppose I have had half-a-dozen fixed at one time and the

other, and every one has been voted a great success by the users; in some cases even where there had been a very strong prejudice against them, owing to the newspaper reports of deaths arising from their use, but in every case as far as I could gather, an improper use. I have, however, never risked fixing one without a vent-pipe. This need not be a great eyesore; it can be of rectangular shape, but care should be taken that it is turned well up into the flue. The later patterns are much improved by the fact, that they are so made, that it is impossible to turn on the gas, without also turning on the water—in fact, they are turned on simultaneously, thus removing a large element of danger. I should like to hear the experience of the members upon this subject also, as the newspaper reports before referred to frequently prevent their adoption, when they would really be a great convenience to the small householder.

While we are dealing with the bathroom, I would point out that the usefulness of that great convenience, the towel-airer (formed by a coil of the hot-water pipes), is much lessened by the almost universal practice of nickel-plating. It was once pointed out to me by a sanitary engineer, but I was rather sceptical, so have tested it more than once, with the result that, in the same system, where the pipes were not plated they have been too hot to touch, whilst those which were so treated could be held without inconvenience. At first I thought that it might arise from the formation of the coil, but my subsequent unvaried experience proved that this was not the case.

As the slop-closet is a thing we cannot often go to the expense of in small houses, and is really not a necessity, try to run to a slop-top to your water-closets. It will save a good deal of slopping about, and the few shillings they cost will be well spent.

Another source of dissatisfaction is the lead-lined pantry-sink. After they have been in use for a little time, the bottoms will be found to have so buckled by the action of the alternately hot and cold water, as to make it impossible to keep them as clean as they should be. The remedy for this is to have them very much thicker than they usually are—12 lbs. at the least; and this is where I think the north country plumbers are so much to the front. I have measured a good deal of their work in the north country towns, and have found that generally it is of a much more substantial character than we are used to in the south. I have seen thick cast lead bottoms used, with a quadrant internal angle of about a 1½-in. radius, which seemed to me as perfect as we could expect a lead bottom to be. I have no doubt the glazed sink will be suggested as a way out of the difficulty, but there is a prejudice with housekeepers against these, owing to the smashing of crockery. Where they have been adopted a wood grid is sometimes placed in the bottom, and if this was kept out when not in use and properly cleaned, would meet this objection; but as a rule it is by no means kept as it should be, and moreover has a most awkward habit of floating on the top of the water. Taking everything into consideration, I am afraid we must stick to lead, with all its faults.

We are so patriotic, that we are inclined to think that oak answers every purpose where a hard wood is required. Now I have seen, and I have no doubt that you have, draining-boards made of this wood, warped and split in every direction. My experience is that there is nothing to compare with sycamore for this purpose, for besides looking clean, owing to its light colour (and this is a consideration), the grain is so much closer than oak, that it is more easily kept so.

When specifying the cistern, do not use the words "to be fixed where will be directed," the usual result that it is placed in a position practically inaccessible to everything but frost. I speak feelingly, as in my own case the cistern is placed in the roof, and the only access to it is through an opening in the wall of the bathroom, 1 ft. 5 in. wide and 1 ft. 11 in. high, the sill of which is 4 ft. off the floor. I was rather surprised to find that I could squeeze through an opening of these dimensions, but squeezing through is a small part of the trouble. Just inside, a valley crosses the opening, and about a foot farther in the exhaust from the hot-water service runs horizontally about 18 in. off the floor, so that it is a case of ducking under the valley, and over the steam pipe; at great risk to yourself in the one case, and to the steam pipe in the other. And, of course, the ceiling joists are innocent of anything in the shape of boarding. With a little forethought this could have been entirely avoided; but although the example given is an extreme one, I have met with many others very little better. When in planning a house, the position of the cistern is considered at the outset, it will be found a by no means difficult problem to arrange for easy access, and frequently off the level of the floor. This is important, as in the case of any of those little failures which will occur, notwithstanding all precautions, the trouble can frequently be stopped without waiting to send for a plumber or, in fact, any member of the male persuasion, which will be absolutely necessary in the case of the usual arrangement of a trap-door and break-neck ladder, which is seldom in position when wanted. Provide also a small quantity of rough flooring round the cistern, and from the entrance to the cistern space, or, what is better still, have the whole space floored. If you cannot go to the cost of boarding and felt throughout the whole of the roofs, squeeze out a little for the cistern space, and on no account omit the cistern cover.

The question of frost brings one to troubles caused by the pipes bursting. A very effectual way to prevent this is to run the cold-water pipes near to the hot-water pipes (but not near enough, as I have seen them sometimes placed in an attempt to remedy the evil) to preclude the possibility of getting any really cold water when required.

Do not be sparing with your stop-cocks; a pound or two spent upon these will be one of the best investments you can make. If possible have one in every separate service: those in the services from the cisterns as close to it as possible, and in the branch services in the same relative positions to the main services. It is then easy to turn the water off from any part in the case of necessity of repair or of burst pipes, a convenience much appreciated by everybody concerned, frequently preventing damage to the house and furniture, besides facilitating repairs and the consequent saving of cost.

Another great convenience where there is a constant supply, is an arrangement whereby the cistern can be emptied, and yet a supply of water obtained off the main. This can be achieved by means of two stop-cocks with a draw-off between. I once had the particulars sent me of a combination fitting of the three in one, which struck me as being a practical solution of the difficulty. I should be glad to hear if any member has had an opportunity of seeing this in practical use.

As it is by no means an easy matter for the uninitiated to trace the water-pipes, or to see clearly to which service the stop-cocks belong, I would urge another little investment, which I have known to save endless trouble. Have all your stopcocks labelled. Small enamelled iron labels can be easily bought, or, failing this, parchment ones (as used for luggage) make a fair substitute, if the pipes are concealed in a casing. In the latter case have portions of the casing hinged over the stop-cocks.

If possible arrange for a draw-off on each floor; much labour and damage to carpets, &c., is saved by this; only take care that you have a large waste to the trough under, or the remedy is worse than the disease.

Try to arrange the water-closets, so that it is not obvious that a person is either going to, or returning from, this particular spot. There is a good deal of sarcasm expended over what is termed the mock-modesty of the English, but I for one should be very sorry to see the barrier entirely broken down. A very simple way out of the difficulty is to arrange for the bathroom with a lavatory in it to open from the same lobby, a short passage connecting this lobby with the main hall or landing. It, moreover, has the advantage of bringing the service pipes together. Do not consider that a water-closet on the first-floor is sufficient for any but the very smallest house. When those little social entertainments, which are so dear to every hospitable householder, are given, many painful and embarrassing situations will be saved by the little extravagance of an additional water-closet.

A really silent acting waste-preventer is, I suppose, not possible. There are, I know, so-called silent ones, but the silence comes too late, besides which the noisest period of their working is unaffected.

In the hot water services take care to have the flow and return pipes of large size, not less than 1½ in., and do not be sparing in the length of the flows and returns. Run them as near as possible to the points required, so that the lengths of single services are as short as possible. Nothing is more irritating than to have to draw off a large quantity of cold water before getting a supply of hot. Never omit the bib-cock for emptying the hot water system, nor the stop-cock in the cold water supply; but for safety have these with loose keys, so that they cannot be tampered with.

A small matter, but one which is so small as to be sometimes overlooked: if it is necessary to run any pipes in the thickness of the floors, see that the boards over are fixed with brass screws and cups, so that any portion of the pipes may be easily accessible without damaging the floor. We all know what the jobbing plumber or gasfitter is capable of when dealing with floors.

It is surprising how few staircases appear to have been thought out; not in the artistic sense, but the practical. It often seems to me that a certain space is portioned out for the stairs, and they have to be got in somehow. At least, that is how they often appear to me. Doubtless the staircase *is* a nuisance, but as it occurs in every house, an effort should be made to make the going as perfect as can be. Winders, we know, are a painful necessity frequently, but a good many years ago an old clerk of works gave me a rule which I have seen worked numerous times since with success; it may be generally known; if so, pray pardon the repetition—that is, to make the width of the winder at 18 in. from the newel end, the same width as the tread. The going will then be found continuous from flyers to winders and *vice versâ*.

Now for the only item which in any way approaches the artistic, and my excuse must be the same as on that other historical occasion—it is only a little one. I have often felt how extremely unhappy the papering or other wall decoration finishes around an archway, the jambs and soffit being in cement and finished with a moulded edge. Sometimes papering the bead or moulding is tried, and a terrible botch it is. Sometimes the paper is cut close up to the moulding, but this never looks satisfactory. A very simple method of overcoming the difficulty is to run a narrow fillet in the cement on the *face* of the wall for the paper to stop against. It need not be more than ⅛ in. projection and ½ in. wide; it therefore adds very little to the expense. It may be that this has been adopted more than I am aware of, but in my experience in not one out of ten instances has any attempt been made to get over the difficulty.

I suppose there is no limit to the subject I have chosen, but I think I have dealt with enough for one evening.

I believe I can claim to have kept the promises I made at the commencement. I have taken you all over the house from top to bottom, and in most of the corners. I have avoided being artistic except my last little lapse, for which I crave pardon; and I do not think I have mentioned many things that you are likely now to have heard for the first time. Perhaps, after all "Reminders" would have been a fairer title.

Believe me, I have not taken up this subject in a carping or cavilling spirit. All the points I have mentioned have been brought to my notice, and the majority of them by clients, some of whom, I must confess, *were* cavillers, and would grumble at anything. They seem to look upon the surveyor as a sort of whipping boy to the architect. Whether it is the architect's greater dignity protects him from the direct assault, I know not; but the probability is they look upon the surveyor prowling around in all the rooms and corners as a nuisance, especially as he is generally on the premises for a longer time at a stretch, when the house is in occupation, than the architect ever is, and they endeavour by this means to get even with him.

Nobody appreciates the artistic side of architecture more than your humble servant, but at the same time he must confess with sorrow, that the practical is often sacrificed to the artistic, or at least the decorative. If you have means for both, well and good, but do not forget that a house is primarily to *live in*. After looking to this, then do all you can to make it a thing of beauty. If you have not money for embellishment, then rely upon a chaste simplicity and good proportion, which are after all the true test of an architect's capabilities. I am speaking now to the artistic architect proper, the man who knows how to embellish

a building, not to the freak architect, the man who by every shilling he spends in embellishment makes his building more and more hopeless.

Finally.—Remember that it is the little things which add to the convenient working of the household that appeal to the lady portion of the client, long after the craze for those tricky little points of design have palled, and (this should be a whisper to any body but a professional one) I have heard that ladies have tongues; and you may rely upon it, that the lady who is satisfied with the internal domestic arrangements of her house, and has a pride in showing her lady friends around, is likely to do the architect more service in procuring him future clients, than the one who practically has to admit that the outside, after all, is the best side.

THE SURVEYORS' INSTITUTION:

PRESIDENT'S ADDRESS.

THE opening meeting of session 1901-2 of this Institution was held on Monday evening at No. 12, Great George-street, Westminster, Sir John Rolleston, M.P., the President, in the chair.

The minutes of last meeting having been read and confirmed,

Mr. J. W. Penfold, hon. secretary, announced a large number of gifts to the library, including a very handsome bequest from the late Mr. Arthur Cates, consisting of 127 works, some of which were of considerable value. These and other books were left to Mrs. Cates with instructions that they were to be given subsequently to the Institution, the Institute of Architects, and others bodies, but Mrs. Cates had given the books at once, and in the circumstances he proposed that a special vote of thanks be given to her.

The vote of thanks having been cordially agreed to, as well as a vote of thanks to the other donors,

The President delivered his annual address, the greater part of which was devoted to an interesting but desponding review of the state of the agricultural industry of the country, and to a consideration of the Agricultural Rating Act of 1896. In his opinion, towns were sponging upon the country by the way people and industries removed, in order to avoid the heavier rates of the towns, to places where parochial expenses were paid in a preponderating proportion by the occupiers of the land. A still further invasion was contemplated by the provision of cheap transit, which was to transport the people of the town into the country to live. While not objecting in any way to this (indeed, he thought it desirable to relieve the overcrowded populations of the large cities), it was surely right that the farmer should be secured in some way against the expenses caused by these incursionists, and the half-rates remitted on land were even an insufficient compensation for the inequality in rating to which he was subjected, and farms in the neighbourhood of dense populations had an especial claim for this remission. He could only hope that in the measure dealing with the general question which was promised the permanent relief of the taxation of agricultural land might occupy the most prominent and important place. Of all the products of land, the only one the value of which appears to be in the ascending scale is timber. In the Midland counties he had been furnished with accounts of timber sales at which single oak trees had realised up to 100*l.*, while other woods were commanding good prices, and poles and thinnings were readily sold. There was a reason for this. The great onslaught that had been made on the virgin forests of the world, from the time of the Phœnicians onwards, without artificial reafforestation, must at length be appreciably felt. The increase of population and the advance of civilisation must also point to an increased use of timber of all kinds for works of construction, for articles of use and ornamentation, and for fuel. A rise in the value of home-grown timber seemed possible; in any case, a ready sale might be anticipated. With the decline in the value of cereals, it could hardly be doubted that a considerable portion of the land of this country (some of which was derelict, and some let at a very low rental) might be planted to advantage. Apart, too, from the planting on a large scale, and in champaign and not woodland countries, much timber might be secured by a careful conservation of such saplings as were the weeds of the locality, and which might be found in abundance in every hedgerow. According to his experience, a hedgerow tree could not be planted to advantage, while the self-sown sapling would flourish. The hedge-cutter was mostly a ruthless destroyer of these, and he could only respectfully suggest to the young members of the profession who had the care of landed estates that a careful supervision of the hedgerows, in view of a future crop of timber, was desirable. An understanding with the tenant might easily be arrived at, and the denudation of the country-side which was so marked in some parts might be prevented, and a future crop of timber, affording shade, shelter, beauty, and profit, might be secured. The study of the science of forestry, for which special opportunities were afforded at that Institution, he would commend also to their careful attention.

The growth of population had its drawbacks as well as its advantages. One of these was the pollution of streams by sewage from dwellings and farmsteads, and it might well be suggested that impure water imbibed by cattle might have an injurious effect, not only upon the animals themselves, but also on human beings who consumed milk or meat. The representative councils of the counties were alive to this growing evil, but the expense of proper sewerage systems in rural parishes still favoured its continuance. With regard to the future treatment of sewage, he might say that there was no prospect of any cheaper processes being adopted than those in vogue, and that those who were intent upon dealing seriously with this question must make up their minds to the expenditure of money. The best, safest, and most efficient system known to-day was the preliminary treatment of sewage by one or other of the bacterial methods, with final purification of the effluent from the tanks or beds on land. In this case the bacterially clarified sewage was in a better condition for application to land than when applied in a crude state. It might, he thought, be taken for granted that the treatment of crude sewage on land was a system no longer in favour. The chemical treatment, too, except in some few cases where the sewage was highly charged with trade liquids, might be said to have been generally abandoned. The bacterial treatment had apparently made such progress that the sewage of any town might be dealt with even at no great distance from population, without final application to land should this not be available, but in his opinion the best system today was a combination of bacterial and land treatment.

Proceeding, the President said: The nationalisation of the land will never appeal to surveyors as an object worthy of accomplishment, but the nationalisation of water may commend itself more to their consideration. An ample supply of pure water is essential to the well-being of the people and to the trade of this country. While inroads are made on available supplies the quality is generally deteriorated as population and cultivation increases. The sources from which pure water, therefore, may be obtained get rarer. However ample in quantity, the water from inhabited areas appears to be undesirable. Water, however good, is defiled by population, and the pollution of water is productive of some of the most terrible diseases to which the human body is subject, as has been demonstrated recently in the borough of Maidstone. To the hills, therefore, it seems we must look for our great future supplies, but these great upland areas are getting scarce, at least in reasonable propinquity to the great cities, and as these are becoming alive to the requirements of their people, something like a scramble arises for such as are suitable, and attempts are made to peg out claims and even to jump the claims of others in order to acquire these. But the need for pure water is as great in the country as in the town, in smaller places as in the great cities; but the expense of the supply is mainly prohibitive to the lesser community. It seems to me, therefore, that, subject to the claims of private owners to the collecting grounds, the water from the sky should be as free as the water of the sea, and that some scheme might in the future be adopted to secure these areas on behalf of the State, and that the cost and the carriage of the water might be the subject of national taxation, as without a generally good supply throughout the country the dangers of disease and death will approach proportionately nearer as population increases. Some of our great cities, in order to secure the purity of water, are already purchasing these collecting grounds as well as the sites of the reservoirs, and this is a use to which land may most properly be applied. If no longer required to supply the people of this country with food, large areas may well be devoted to supplying them with water, the importation of which does not appear to have been at present suggested. If, however, the acquisition of large areas surrounding reservoirs becomes the fashion, there will be many more sources available than there are at present, inasmuch as the population and the cultivation on these areas can be dispensed with, and thus many sources now not available will be rendered suitable. . . .

The commercial prosperity of the country, the great amount of construction that is going on, has doubtless created an unusual demand for able bodied labourers such as the rural districts supply, and better pay and shorter hours have proved an attraction. In the matter of pay we can only regret that the farmer cannot compete with the wages paid by contractors and mine-owners. If he could, he would, in my opinion, keep the labourer on the land; but there is another drawback to certain kinds of rural labour, and that is continuous work for seven days of the week. Live stock must be cared for and cows must be milked on Sundays as well as on other days, so that I think it is not to be wondered at that there is a growing objection to work of this kind when the workman elsewhere is usually able to witness a football match on Saturday afternoon and to lie off on Sunday, probably with as much or more wages in his pocket. It seems hard to suggest a relief man for Sundays to the farmer or dairyman who can hardly make ends meet as it is, but it seems to me that to keep the labourer on the farm is a matter of money and money only. I am not a believer in the attractions of the town. Other things being equal, the country-bred man is usually averse to town life, and he is, as a rule, more comfortably housed in the country, especially where he has a garden to his cottage or an allotment, and if prosperity were to return to agriculture there would in my opinion be no difficulty in keeping the labourer on the land.

With regard to the housing in towns, I must remark on the general failure of municipal enterprise in that direction. No provision is ever made for the very poor. It is always the aristocracy of the working classes, those who are thoroughly able-bodied, earning good wages, and who can pay good rents, that are catered for. But it is those men who are born in a degree incapable or weak, the poor spinsters and widows who work in garrets, who receive no attention; and in my view, until municipalities provide for this class, who have the greater need, their efforts will still be attended with failure. If the public are to provide house accommodation for the poor, those who represent the public had better consider the construction of houses which can be let at a shilling a room the week, and which contain very few rooms. In my own experience where areas of this class of houses are taken down by railway companies or corporations, they are never replaced, but instead houses of six rooms at least are built, which do not rehouse the displaced population, who have to resort again to the overcrowded areas wherever they can be found, and which consequently become more crowded still. The very poor, who are always overlooked, have in my opinion the greater claim for consideration when house accommodation is provided at the public cost, and to provide for this class should in my opinion be the aim of the public bodies of this country. . . .

A matter of considerable difficulty and perplexity to surveyors is the law, or rather the absence of law, with regard to ancient lights, and I hope that the joint recommendations of our Institution and of the Royal Institute of British Architects, or something based on them, may before long blossom into an Act of Parliament. With the great amount of rebuilding and construction on a larger and more handsome scale that is now going on in our great towns, disputes as to lights are frequent and harassing. The instability of law founded on nothing more definite than varying, or apparently varying and conflicting, judgments in the Law Courts, is manifest. An excellent paper on this subject was read by one of our members at our meeting at Southampton last spring, and I observe the reference in it to a

Leicester case (Warren *v.* Brown), decided by Mr. Justice Wright in 1900, which even as I write is awaiting judgment by the Court of Appeal.* Mr. Justice Wright expressed it as strange that the question should still be open to discussion as to whether the right of light that is acquired by statutory prescription is a right to a continuance of substantially the whole quantity of light which has come to the windows during the twenty years, or is limited to a sufficient quantity of light for all ordinary purposes. His lordship, who was both judge and jury in the case, obviously took the latter view, for after having found (1) that though there was no material obstruction or diminution of light to the upper windows of the factory, to the windows on the ground floor the defendant had materially diminished the light which the plaintiffs had enjoyed for those windows for the past twenty years, but that abundant light remained for all ordinary purposes of inhabitancy or business; (2) that the inconvenience to which the tenant was subjected could be, and to a great extent it had been, obviated by the removal of machines to the upper room, and in any case it could be remedied by some increased expenditure for gas; (3) that if the plaintiffs should be entitled to damages the amount should be 100*l.* for the tenant and 200*l.* for the owner, his lordship held that the plaintiff had no cause of action, and gave judgment for the defendant. With very great respect to this capable and learned judge, I venture to express the opinion that he has set the defendant a very formidable task to defend and uphold his judgment. The legal profession and our own will alike, no doubt, await with curiosity and anxiety, and will read with real interest the considered judgment of the Court of Appeal. If that Court speaks with more definiteness than it has ever done before as to the angle that should, as a general rule, be regarded as sufficiently protecting those who have acquired by statute easements of light, Mr. Justice Wright will, even if he should be overruled, have rendered valuable service to the building enterprise in our large commercial centres.

One subject which, as an inhabitant of this metropolis for the greater part of the year, seems to be of growing importance, is the great increase of street traffic, and well worthy of consideration are the various schemes put forward for its relief. The widening of streets on a large scale seems to be a project too ambitious to suit the pockets of the ratepayers, inasmuch as compensation for trade disturbance must amount to an enormous sum in addition to the cost of the land and buildings. Widening, however, is only one way of relieving traffic. It cannot be necessary that all the vehicular and pedestrian traffic should be conducted on one level. Streets or causeways may be deepened or heightened, and in my view certain schemes put forward by Sir Frederick Bramwell, Sir John Wolfe Barry, Mr. Emden, and others in this direction are most worthy of the consideration of the public. Again, the expansion of commerce and the general growth of population causes this increase of street traffic to be experienced in all our great cities, and the question of the material most suited to bear that traffic is a question of great interest to the whole country, and is likely to engage the attention of surveyors the world over. . . .

Gentlemen, the present is the age of association. . . . . From small beginnings our association has blossomed into one of the most important institutions of this country, representing vast and varied interests. When we consider that almost the whole of the land and buildings, the mines, the quarries, the forests, and very largely the interests of the great municipal and industrial corporations of the United Kingdom are represented by our Institution, we must, I think, conclude that the collective weight of the opinion of our members on matters affecting these interests must have due weight even in the Councils of the State. With the growth of our collective importance, therefore, our individual responsibilities must proportionately increase. With the advance in the position of our Institution, the status of those who comprise it must correspondingly advance, and they in turn will recognise that the interests of the Institution and the welfare of its members are under their care and in their keeping. . . . .

Mr. A. Vernon proposed a hearty vote of thanks to the President for his address. Many of the subjects considered, the President had treated with impartiality. The only view to which he would take exception was the gloomy view the President entertained as to the agricultural prospects of the country. Throughout the whole world there were bitter complaints as to the agricultural industry, and in this country we were suffering as other countries were. He hoped that things had been better in recent years.

Mr. A. Buck seconded the vote of thanks. One subject of considerable importance which the President had dealt with was the migration of the rural population to the towns. One means of getting the population to stay on the land was to get the landlords to improve tenements, for it was the bad condition of the dwellings of farm labourers that drove the young men to the towns.

The vote of thanks being heartily agreed to,

The President briefly replied.

The next meeting will be held on the 25th inst., when a paper will be read by Mr. Dudley Clarke on "Local Taxation."

* The decision of the Court of Appeal is reporte on another page of our issue this week.—Ed.

Illustrations.

VICTORIA MEMORIAL COMPETITION.

We give this week the general perspective view and the plan of Mr. T. G. Jackson's design for the Victoria Memorial, and the elevation of his triumphal entrance arch to the processional road. We give also the perspective view of Dr. Rowand Anderson's triumphal arch for the same situation in his scheme; a design which, as we have already observed, is much the best feature in his scheme, and its picturesque Renaissance treatment affords an interesting and effective contrast to the more Roman severity of Mr. Jackson's arch.

The following extracts from the Report submitted by Mr. Jackson with his design will best explain his views in regard to the treatment of the problem :—

"I have assumed that the Mall in any case be replanted on the lines shown in the official plan, but in other respects I have availed myself of the liberty allowed to the competitors to depart from the arrangement there laid down.

The Square at the West end.—At the west end of the Mall in front of the Palace I form a regular square or 'place' enclosed by colonnades, and partly occupied by gardens. It seems essential to the dignity of the scheme that this part should be laid on formal lines, having relation to the façade of the Palace and the straight avenue of the Mall beyond. I have also thought it important, so far as it can be done without inconvenience, to divert all public carriage traffic from this area. The cross road from north to south in front of the Palace must of course remain, but I make the two public carriage roads which run east and west to pass entirely *outside* of the colonnades which would screen the enclosed space from dust and noise, allow the monuments it contains to be enjoyed by the public without interruption, and so add materially to the quiet of the Palace itself.

It will be seen from my plan that this makes the line of road by Constitution Hill considerably more direct than at present, and provides a second carriage road on the other side.

The enclosed square is shut off from the Mall by a screen of piers, railings and gates, which excludes public wheel traffic, but gives foot passengers free access to the gardens and enclosure. Gates, however, at each end of the screen would be opened for carriages going to the Palace at receptions, and the Royal gate in the middle for the King when going in State to Westminster.

The Queen's monument would occupy the centre of the square, right and left of it I have placed a fountain of bronze in a basin of stone, and round it are groups of statuary representing the principal Colonies and Dependencies of the Empire. The area would be gay with flowers and shrubs in grass plots, and the colonnades would afford shelter and shade, and would be admirably suited for spectators at State processions, for whom the flat roof would also be available.

The back wall of the colonnades affords space for inscriptions and national memorials in sculptured relief to be added from time to time, for which there is at present no such place available in London.

The four pavilions at the angles would bear the Royal arms and cypher, and be adorned with bronze figures representing arts and industries.

The central part of the square is left open to afford space for carriages at State receptions.

The Mall.—The Mall, planted as proposed by the official plan to which I have adhered, forms three avenues. The two outer are public carriage roads, the middle one, besides a 40-ft. road in the middle, has a wide grass plot on each side, affording space for the contemplated avenue of statues. The central avenue would be open to the public by day, but I propose to enclose it by railings, with gates to be locked at night for protection of the statues, a precaution which experience both at London and Berlin proves to be a necessity.

On State occasions the King would drive down this central avenue, but otherwise it would never be used by carriages.

The Arch.—At the east end is the great arches through which the Royal carriages would pass on State occasions. It seems better to place this at the entrance to the Mall proper than at the spot marked on the official plan. Eastwards of the spot where I have placed it, the Mall expands into several diverging thoroughfares, and its continuity is lost; and the arch would seem to lose its meaning unless it admitted specially and directly to the road leading to the Palace. The effect of it also in combination with the steps leading to the Duke of York's column would, I think, be very good. The exact position of the arch, however, is not material.

In its design I have aimed mainly at simplicity and dignity, avoiding ornament, except of the highest kind, and emphasising mass and proportion. In either of the positions suggested it will have to compete with the high buildings of Carlton House-terrace, and it must be on a grand scale or it will be dwarfed by its surroundings. The Marble arch, which is only 42 ft. 8 in. high, or the Wellington arch, which is 62 ft. high, would in this case look quite insignificant. I have made my archway 60 ft. high and 30 ft. wide; the height to the top of the cornice of the main order 79 ft., to the top of the attic 93 ft., and to the top of the sculpture which crowns it 120 ft. The area of the structure is 68 ft. by 34 ft., and besides the simple colonnade which carries the vault, the only positive ornamental details are a bronze frieze of life-size figures representing the Jubilee processions of 1887 and 1897.

General Scheme.—The whole scheme, beginning with a stately arch, continuing with avenues of trees and statues along the Mall, and reaching a climax in the colonnades and gardens of the new Palace square at the west end, would, I venture to hope, be a not unworthy expression of the nation's grateful remembrance of her Queen, and it would, I think, compare favourably with anything of the kind to be found in other European capitals.

In conclusion, it may be observed that the whole scheme is divisible into parts. The arch is quite distinct from the rest, and the statues in the Mall would, of course, be added one by one as occasion arose and means were found.

As no estimates were asked for, I have made the best design I could without considering expense, but I do not think any part of it is unduly costly. The most expensive feature would be the sculpture, of which, as I have said, the greater part can be carried out piecemeal.

The material I proposed generally for the masonry is hard Portland stone, which is not only the most durable and best able to resist this climate, but is also the most beautiful material for London use, bleaching, as it does, with exposure to a more than marble-like brilliancy."

We may add that while we considered Mr. Webb's design was rightly selected on account of its admirable and truly architectural plan, more especially in regard to the method of connexion with Charing Cross at the east end, we cannot but express the greatest admiration for Mr. Jackson's design, more especially his treatment of the ornamental *place* in front of the palace, which internally would have made a beautiful piece of work, although externally there is an architectural defect, to our eyes, in the fact that the rectangular lines of the screen contrast unpleasantly with the curved lines of the roadway, and this interferes with the architectural unity of the scheme.

ROOD SCREEN, ST. DENYS', SLEAFORD.

This screen, which is one of the finest in Lincolnshire, is referred to by A. W. Pugin in his treatise on "Rood Screens," being particularised with eight others as amongst the most remarkable in England. Dr. Mansel Sympson, in his admirable and exhaustive paper on "Lincolnshire Rood Screens and Rood Lofts," read at the 1890 meeting of the Lincoln and Nottingham Architectural Society at Holbeach, repeatedly refers to it. "The splendid example at Sleaford I should feel inclined to date the close of the fourteenth century, about the same time as the stalls at Lincoln from the similarity of the tabernacle work, which is very evident on comparing the pulpitum at Lincoln with that at Sleaford. The stalls at Lincoln are dated at about 1380, which would suit the work at Sleaford very well, as there are traces of Perpendicular feeling in the transom, which is inclined at an angle of 45 deg. in the two outer bays." (Architectural Society's Report, 1890, p. 199.)

It is, however, probable that the screen is a little later than this. The date of nave and chancel arch may be taken as Decorated at about 1380, and there are evident traces on the north jamb of the chancel arch of a previous screen of a different and flatter curve of groined canopy at a lower level ; the plug holes for the woodwork still remain. This was destroyed by fire, the springing from north jamb of chancel arch and the respond of north arcade having been calcined to the sill of the clear-story windows. The level of the original screen was higher than its successor, as may be gathered from the insertion of stone in the old beam holes, and the fact, as shown, that there are two steps from the sill of the upper doors to staircase to the level of the "florthe wch remayneth."

From Peacock's "Church Furniture" we learn that the rood loft was taken down in 1566. "Itm.: the rode lofte taken downe all save the florthe, wch remayneth standing, wch we cannot take doune, for yt is a waie frome one house to another, so yt we have noe passage but that waie to ytt ; " and probably then the panelling to the front was taken down and the groined canopy at the west removed. Still much remains that is very beautiful.

The drawing will explain itself. It is curious that although there are two staircases to the rood loft, a third was added some forty years after the nave was built, and contains two of the three windows engraved by Sharpe in his "Decorated Windows" (1849).

The screen was faithfully restored in 1833, and then the doors to the centre opening, which enclosed the chancel (as shown on a sketch in possession of Mr. E. Yerburgh, dated 1830), were removed.

It is regrettable that the lower doorways were then blocked by two monuments to Robert Carre (1590) on the north, and Sir Edward Carre and his wife (1680) on south.

The screen is one only of the many objects of interest to the architect and ecclesiologist in this church, which is situated in a district singularly rich in church architecture.

H. K.

THE NEW GOVERNMENT OFFICES.

THE following short and trenchant leading article appeared in the *Times* of Tuesday :—

"Mr. Akers-Douglas is a bold man. He is not afraid, in spite of abundant warnings, to set himself in open opposition, not only to the educated public, but to the strongly expressed convictions and wishes of the architectural profession. He has obstinately adhered to the unfortunate policy upon which, after the lamented death of Mr. Brydon, the Office of Works embarked with regard to the new Public Offices at Westminster. It will be remembered that the late Mr. Brydon was appointed to design this important block of buildings, which are to occupy the magnificent site on the west side of Parliament-street, and that after making his plans and elevations the architect died. These plans and elevations were, of course, subject to revision ; and, moreover, the detailed drawings were not made. Obviously, then, the proper course was for the Office of Works to call in the best available architect of a talent akin to Mr. Brydon's and to ask him to finish the details in the spirit of Brydon's work, and generally to bring the building to its completion in as close accord as possible with the original intention. But the Office of Works preferred a more domestic and possibly cheaper method. It has a staff of architectural clerks of its own ; why not hand the job over to them ? The intention so to do was announced ; and immediately protests were made by Mr. Leonard Stokes (Mr. Brydon's executor), Professor Aitchison, and other architects, and by many other persons who urged that nothing should be done to jeopardise the success of what promised to be a really fine building. In this sense we have twice given expression to what we believe to be the absolutely unanimous opinion of competent and impartial people. In reply, the First Commissioner put out first an extremely feeble defence of his proceedings ; and, secondly, an advertisement in the trade journals asking for builders' tenders. The time for these tenders to be sent in expires to-day. The unrepentant First Commissioner has had his way, and all that now remains for him is to accept one or other of the tenders, to proceed to carry out the clerk-completed version of Brydon's design, and to trust to the ignorance of his countrymen and to the chance that the British voter will not detect the difference between work that is finished and work that is botched. Probably for the next big undertaking he will not think it worth while to employ an architect at all. Why should he? An office which can finish ought surely to be able to begin. Why trouble about professional opinion, the Royal Academy, the Institute of Architects, or any of 'those who know'? We are only surprised that Mr. Akers-Douglas should have gone outside his office for the Queen Victoria Memorial. If he can carry out the Parliament-street block, why apply to any one else to reorganise the Mall or even to set up her Majesty's statue?"

ARCHÆOLOGICAL SOCIETIES.

ROYAL ARCHÆOLOGICAL INSTITUTE.—At the general meeting of this Institute on the 6th inst., Sir Henry H. Howorth, President, in the chair, Mr. C. A. Bradford read a paper on a Millom Vesica Piscis window of unusual character at Millom Church, Cumberland, which he illustrated with a number of photographs and drawings. In sketching the history of the term *vesica piscis* (fish-bladder), he pointed out the difficulty of discovering the relationship between the name itself and the thing signified by it, the latter indicating a regular geometrical figure of elegant and balanced form, the former a natural object of unsymmetrical and inartistic appearance. The term was apparently first met with in the works of Albert Dürer, and introduced into the vocabulary of English antiquaries at the beginning of the nineteenth century, perhaps by Hawkins in 1813. The origin of the form itself was probably to be found in nature—in the leaves of the forest or the human eye. Translated from nature to art, it found a place in decorative art at a very early period, and spreading from the east to the west was soon employed everywhere—in Early Christian MSS., in paintings and frescoes, in painted glass, tiles, objects of devotion, and ecclesiastical vestments. Examples in sculpture were numerous in both England and France, in tympana of doorways, on capitals, on altar frontals and tombs. To-day there were at least three kinds of window to which the term "fish" was applied, namely, to that of the pointedly-elliptical outline ; to that filled with tracery of a peculiar character described by German archæologists ; and to that generally known as the spherical triangle. Mr. Ruskin had pointed out the beauty and suitability of the *vesica piscis* form for gable windows in his description of the example at Dunblane Cathedral ; and many instances of its occurrence, placed either vertically or horizontally, in England and Scotland were enumerated, notably that at Ashford Carbonell in Shropshire. The use of the *vesica piscis* as an elemental form in the development of Gothic window tracery had been carefully worked out by Freeman. The window at Millom was remarkable (1) for its large size, measuring 10 ft. 4 in. by 7 ft., and occupying the entire west end of the south aisle of the church ; and (2) for its being filled with tracery. There was no documentary evidence of the fabric of the church, but the date of the window appeared to be about 1330, which would probably fix it as the work of Sir John Hudleston, who obtained a licence from Edward III. for the fortification of the adjoining castle.—In the discussion that followed, Mr. C. R. Peers, Rev. T. Anden, Mr. E. Green, Mr. P. M. Johnston, and Judge Baylis took part. Mr. R. L. Hobson then contributed a paper on "Mediæval Pottery found in England." After a few remarks on the quality of mediæval pottery and the difficulty of arranging specimens in chronological order, Mr. Hobson went on to review the existing evidence of date, and to try and formulate the characteristics of the various periods. The constitution of the Abbey of Evesham (A.D. 1214) furnished the earliest reference to earthenware in contemporary writings. Manuscript illuminations were next considered, the most remarkable being a picture in the "Loutrel Psalter" (early fourteenth century) of a rustic breaking a pitcher over another rustic's head. This is the earliest instance in which pottery is clearly indicated in a mediæval MS. Mr. Jewitt's verdict on the Burley Hill find was criticised to clear the way for the statement that no specimen found in this country has been proved to be of Norman date, though it is extremely probable that such specimens exist unrecognised. Lantern slides, showing in all about fifty objects, were shown in two series—documentary pieces, ranging from the late twelfth to the sixteenth century, and a miscellaneous exhibition, including a number of costrils, some fragments of so-called Cistercian ware, pieces illustrating the various forms and ornaments in use, and a number of vessels of grotesque shape.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The first meeting of the Session 1901-2 was held at 32, Sackville-street, Piccadilly, on November 6, Dr. W. de Gray Birch, V.P., in the chair. Mr. C. H. Compton exhibited two copies of Court Rolls of the Manor of Stoke Newington. One dated May 18, 13 George I., A.D. 1727, being an admission of Maria Lascells to a messuage, is in Latin, which ends *Fecitque fidelitatem* (and made fealty). The other is dated July 9, 1740, and is an admission of Mary Ingram to a moiety of certain hereditaments held of the same manor, is in English, and ends "but her fealty was respited." This is the usual form in copyhold admissions since that date. Mr. Compton also read a paper on "The President and Council of the North," an institution created in the twenty-eighth year of Henry VIII. for the government of the northern counties of England during and after the rebellions consequent upon the dissolution of the lesser monasteries. Some further relics from the crannog at Dumbuck were exhibited by the Rev. H. J. D. Astley, and were commented upon by the chairman, Mr. Gould, and Mr. John Bruce, who mentioned that his excavations at Langbank, resulting in the discovery of a crannog upon the south side of the Clyde, as already reported, were suspended until the spring, but in due course a report of the operations and the results would be presented to the Glasgow Archæological Society.

THE LONDON COUNTY COUNCIL.

THE ordinary weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring-gardens, Mr. A. M. Torrance, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Chelsea Borough Council 13,500*l.* for purchase of artisans' dwellings ; Bethnal Green Borough Council 9,760*l.* for baths and wash-houses ; Camberwell Guardians 50,000*l.* for extension of infirmary ; and Greenwich Guardians 6,000*l.* for fittings and fixtures for schools.

Acquisition of Southfields, Fulham.—The following recommendation of the Parks and Open Spaces Committee was agreed to after discussion :—

"That the estimate of 30,000*l.* submitted by the Finance Committee be approved ; and that the Council do agree to contribute three-fourths of the cost of the proposed acquisition and laying-out by the Council of the Metropolitan Borough of Fulham of the land at Southfields, Fulham, about twenty-two acres in extent, for the purposes of a public open space, such contribution not to exceed 30,000*l.*, and to be made upon the condition that the Council of the Metropolitan Borough of Fulham undertakes to maintain the ground as a public open space, and to complete the work of laying out within a period of two years from November 5, 1901. . . ."

Street Improvements.—The following recommendation of the Improvements Committee was also agreed to :—

"That, subject to the Councils of the Metropolitan Boroughs of Lambeth and Camberwell giving their consent to the proposed tramway from Camberwell-green to Lordship-lane near Crystal Palace-road, and agreeing to contribute between them one-third of the net cost of the necessary street widenings, and subject also to one-third of the net cost of the street widenings being charged to the account of the improvement, the remaining third being charged to the tramways account, which will also be charged with the whole cost of laying down and paving the tramway track, application be made to Parliament in the Session of 1902 for powers to widen Denmark-hill, Champion-park, Grove-lane, Dog-Kennel-hill, Grove-vale, and Lordship-lane, in general accordance with the plan approved by the Improvements Committee on October 30, 1901."

Subways for Gas and other Pipes, and Tramways.—The Highways Committee recommended, and it was agreed :—

"That the Council do apply, in the next Session of Parliament, (1) for powers to make subways in streets for the reception of pipes, wires, and other things, where desirable, and for electrical traction and other purposes of locomotion ; and (2) powers to construct a subway and to construct tramways therein for electrical traction from the Victoria-embankment, along Wellington-street, across the Strand, through the new street thence to Holborn,

under Holborn and Southampton-row, and to take such tramways, by an inclined plane, to the tramways terminus in Theobald's-road, or to the tramways authorised to be constructed in Roseberry-avenue, as may be considered most expedient."

Tramways—On the recommendation of the same Committee, the following was agreed to :—

"That application be made in the next Session of Parliament for powers to enable the Council to construct tramways, for an underground conduit system of electrical traction, from the London County Council Tramways at Camberwell-green, viâ Denmark-hill, Champion-park, Grove-vale, and Lordship-lane, to a point near the intersection of that thoroughfare with Crystal Palace-road."

Preservation of View from Richmond Hill.—The Parks and Open Spaces Committee brought up a Report containing the following recommendation, which was agreed to :—

"That the estimate of 68,500*l.* submitted by the Finance Committee be approved ; and that, subject to Parliamentary authority being obtained to enable the several county and other councils to contribute towards the purchase, and to enable this Council to maintain the land, the Council do resolve to contribute a sum of 36,000*l.* towards the cost of the acquisition of the Marble Hill estate as a public open space, such estate to be vested in, and remain under the control of, the Council in perpetuity. . . . ."

Bow Bridge Reconstruction.—The Bridges Committee submitted a Report on this matter, containing the following paragraphs :—

"In 1895 our attention was first called to the necessity of the widening of Bow Bridge. The width of the roadway between the parapets is 40 ft. 6 in., which, generally speaking, is a fairly good width for a bridge, but having regard to the fact that it is on the line of an important thoroughfare between West Ham and London, and that a considerable portion of the carriageway is occupied by a double line of tramway, it is insufficient for present requirements. . . . . In considering this question we have borne in mind that Bow Bridge is a county bridge, and that it is of importance to the public generally. We have also considered it from a navigation point of view. With a view, therefore, of providing an iron bridge to meet the needs of traffic, with an improved headway, we instructed the Engineer in June, 1898, to prepare a design showing a total width of 58 ft. between the inner sides of the two outer girders, of which 3 ft. would be occupied by the centre girder, as in the case of Lea Bridge, two roadways, each 18 ft. 6 in. wide, and two footways, each 7 ft. 10 in. wide. The width of the span of this bridge would be the same as that of the existing bridge, the foundations of the latter being used for the new one ; the headway at the centre of the span, however, would be 8 ft. 7 in. above Trinity high-water level, or 2 ft. more than the present maximum headway. This improved headway is practically maintained for the entire span, the level of the underside of the bridge at the abutments being only 4 in. below that at the centre of the span. The levels and gradients of the road surface of the approaches to the bridge would remain practically unaltered. The Engineer's estimate for the construction of such a bridge as is described above, including a sum of 3,430*l.* for a temporary bridge and road which it would be necessary to construct in connexion therewith, was 17,000*l.*, in addition to which must be added the cost of acquiring property and the compensation which would have to be paid for the temporary use of land, namely, 4,000*l.* . . . In December, 1900, the West Ham Corporation intimated that they were constructing a line on the south-east side of High-street, Stratford, for the purpose of making a 70-ft. road as far as Bow Bridge, and asked to be informed what would be the approximate additional cost for rebuilding the bridge 70 ft. wide instead of 58 ft.

Before replying to the West Ham Corporation it was necessary to make a careful comparison of the methods which would have to be adopted to accommodate traffic during the construction of a bridge either 58 ft. or 70 ft. in width. The conclusion we came to was that during the construction of a bridge 58 ft. wide the traffic would have to be provided for in the following manner—namely, the northern half of the existing granite bridge would have to be demolished, and the corresponding half of the iron bridge would then have to be erected. That during these operations one line of tram traffic and the general vehicular traffic passing from west to east would have to be accommodated by the construction of a temporary timber bridge with its approaches crossing the river Lea about 175 ft. south of the present bridge. That the other line of tram traffic and vehicular traffic passing from east to west would have to cross over the undemolished or southern half of the bridge, the pedestrian traffic being provided for by the erection of a temporary timber widening on the south side of the existing structure. During the construction of a bridge 70 ft. wide we found it would be possible to dispense with the temporary bridge and its approaches, as in the formation of a 70-ft. bridge the tram and vehicular traffic would be adequately provided for without involving any serious inconvenience or obstruction. Moreover, in the case of a 70-ft. bridge the southern portion of the existing granite structure would be first removed and the southern half of the iron bridge built, after which the whole of the traffic could be diverted on to the finished part while the formation of the northern half was in progress. The pedestrian traffic would, throughout the whole period of the rebuilding of the bridge, be accommodated by a temporary timber widening of the old bridge on its northern side. As the necessity for the construction of a temporary structure on the south side of the present bridge would thus, in the case of a 70-ft. bridge, not arise, a considerable saving would be effected. A still further reduction of the cost of a temporary bridge would be represented by the sum required for the purchase of the necessary property and for compensation to persons affected by the alterations ; also for the maintenance, lighting, &c., of the temporary bridge for about three years. Taking into account the increase in the width of the bridge, also the additional margin of strength necessitated by the augmented dead and live loads, the Engineer estimates that the approximate cost of a bridge 70 ft. in width would be 19,000*l.* Having regard to all the circumstances, we think it would be well that the scheme for the construction of an iron bridge 70 ft. in width should be adopted . . . We recommend :—'That the estimate of 21,200*l.* submitted by the Finance Committee for the reconstruction of Bow Bridge be approved, and that the reconstruction be undertaken by the Council on condition that the Lea Conservancy Board contribute 5,000*l.* towards the cost, namely, 19,000*l.*, of the actual construction of the bridge, and the West Ham Corporation one-half of the remainder, it being understood that the Council and the West Ham Corporation shall each bear the cost of acquiring the necessary property on its side of the river.'"

The recommendation was agreed to.

Fire Station, Brixton.—An estimate of 15,000*l.* for a new fire station at Brixton was approved.

Cubicles, Parker-street Lodging-House.—It was also agreed to spend 500*l.* on the construction of additional cubicles at Parker-street lodging-house.

Housing at Wood Green.—It was decided to spend 2,000*l.* on the development of the White Hart-lane estate, Wood Green.

Tenders.—The Parks and Open Spaces Committee recommended, and it was agreed :—

"That the necessary materials for repairing the tar-paved playground at London-fields be obtained from Messrs. Constable & Co., Ltd., at the following prices :—Topping, 19*s.* 9*d.* per ton ; dust, 16*s.* per ton ; and spar, 30*s.* per ton. . . ."

District Surveyor for North Battersea.—The Building Act Committee reported as follows, the recommendation being agreed to :—

"The Council on November 10, 1896, consented to the appointment by Mr. H. J. Hansom, District Surveyor for North Battersea, of a deputy to act for a period of one year, the state of Mr. Hansom's health being such as to prevent him from carrying out his duties efficiently. This arrangement has been renewed from time to time, and the Council, on July 30, 1901, consented to Mr. H. J. Hansom appointing his son, Mr. R. D. Hansom, as his deputy for a period of six months from July 11, 1901, in consequence of the death of Mr. W. H. Woodward, who at that time was acting as deputy for the district. When recommending this appointment, we also stated that the whole question of the district surveyors' districts was under our consideration, and that we hoped to be in a position to report fully upon the matter shortly, including in our Report the arrangements to be made with regard to the position of Mr. H. J. Hansom and the permanent supervision of the district of North Battersea. With regard to the district surveyors' district generally, we have formulated our proposals, which will be submitted to the Council for approval in the course of this month. As regards the case of Mr. H. J. Hansom, we have come to the conclusion that the existing arrangement under which the district is supervised by a deputy should cease, and that Mr. Hansom should resign his office. Mr. Hansom has been duly informed of our decision, and we have now to report that he has tendered his resignation. We shall report the steps to be taken for filling the vacancy when submitting the Report as to the districts generally ; in the meantime we have instructed the architect to make such arrangements as he considers necessary for the proper carrying out of the work in the district, as the appointment of Mr. R. D. Hansom as deputy will, of course, terminate on the acceptance of the resignation of Mr. H. J. Hansom. We recommend:—'That the resignation of Mr. H. J. Hansom, District Surveyor for North Battersea, be accepted as from November 12, 1901.'"

Tenders for Electric Tramways.—On the recommendation of the Highways Committee, the following recommendations were agreed to :—

"(*a*) That, subject to the result of the usual inquiries proving satisfactory, the tenders of Messrs. Dick, Kerr, & Co., Ltd., be accepted for the supply, (A) for the sum of 25,964*l.*, of the continuous-current plant, and, (B) for the sum of 46,626*l*, of the three-phase plant required for the electricity-generating stations to be erected at Greenwich, at the temporary station to be established near Loughborough Junction, and at sub-stations, in connexion with the reconstruction, for electrical traction, of the London County Council Tramways between (*a*) Westminster Bridge and Tooting, (*b*) Blackfriars-road and Kennington, and (*c*) Waterloo-road and St. George's-circus.

(*b*) That Messrs. Dick, Kerr, & Co., Ltd., be allowed to sublet (1) to the English Electric Manufacturing Co., Ltd., of Preston, the manufacture of the dynamos, generators, and other electric plant under both contracts ; (2) to Messrs. Ferranti, Ltd., the manufacture of the large engines under both contracts ; and (3) to Messrs. Belliss & Morcom, Ltd., the manufacture of the auxiliary engines under the contract (A) for the continuous-current plant."

The Council, having transacted other business, adjourned.

APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

THE London County Council on Tuesday dealt with the following applications under the London Building Act, 1894. Unless otherwise stated, consent was given on conditions. The names of applicants are given between parentheses :—

Lines of Frontage.

Dulwich.†—A pair of semi-detached dwelling-houses commenced to be erected on the north-west side of that portion of Canonbie-road, Forest Hill, running from south-west to north-east (Mr. W. A. Lewis for Mrs. E. S. Evans).—Consent.

Lewisham.—A dwelling-house on the west side of Bromley-road, Lee, to abut upon Ronver-road (Mr. C. W. Horser).—Consent.

Space at Rear.

Westminster.—A modification of the provisions of Part V. of the Act as to the extension above the diagonal line directed by Section 41 of that Act to be drawn, so far as relates to the erection of portions of blocks E, F, and G of residential flats known as St. James's Court, Buckingham-gate, Westminster (Mr. C. J. C. Pawley for Mr. R. Rickard).—Consent.

Width of Way and Lines of Frontage.

Hackney, North.—Houses on the north-west and south-east sides of Portland-avenue, Clapton Common, with portions of the boundaries of the forecourts between the external walls of the buildings and the street at less than the prescribed distance from the centre of the street (Mr. C. Cheston for Lord Amherst of Hackney).—Consent.

Width of Way and Working-Class Dwellings.

Rotherhithe.—Two intended dwelling-houses, to be inhabited by persons of the working-class, and proposed to be erected as an addition to Vine-street buildings, on the east side of Vine-street, Tooley-street, Bermondsey (Mr. A. R. M. Gunn for the London Labourers' Dwellings Society, Limited).—Consent.

The recommendation marked † is contrary to the views of the Local Authority.

NEW BOARD SCHOOLS AND THEIR SITES, LONDON.

THE School Board for London have just issued their annual schedule of the sites in respect of which they will seek to obtain a provisional order for the building of new, and the enlargement of existing, Board schools in London. The total number of scheduled sites is forty-one, but inasmuch as in each of four divisions two alternative sites have been chosen, the actual number of new sites to be taken amounts to thirty-seven. Taking a mean of the two areas for each pair of coupled sites we find that the thirty-seven sites cover an aggregate total area of 21 acres 26 poles (more or less), and are distributed amongst the following divisions :—Tower Hamlets—No. 537, Commercial-road East with garden ground, *or* Nos. 67-83 (odd), Bromley-street, with Nos. 62-80 (even), Portland-street, Stepney (1), Southwark—No. 46, Lant-street ; Nos. 205-7, Tabard-street, with Manciple-place and two houses in Pardoner-street, Southwark ; and No. 91, East-lane, Bermondsey (3). Marylebone — Nos. 32-8 (even), Haverstock-hill ; Nos. 29-33 (odd), Cromer-street, St. Pancras ; and Nos. 7 and 9, Well-walk, *or* the houses and gardens known as the Grove, Grove-lodge, Netley-cottage, and Terrace-lodge, in the Grove, Hampstead (3). West Lambeth—Vacant land in Sellincourt-road, Wandsworth ; part of the garden of Elmwood house, Upper Tooting, *or* a plot of ground on the northern side of Elmfield-road, Balham ; land, houses, &c., Nos. 24-6, Gaskell-street, adjoining the Larkhall-lane Board Schools, Wandsworth ; a portion of the Putney Athletic Ground, between Hotham and Erpingham roads ; two plots on the northern and south-western sides respectively of

Garratt-lane, Wandsworth; land near Burntwood-lane, Earlsfield; Linden Lodge and grounds, with an adjacent plot in Bolingbroke-grove; the St. John's Hill House School; Nos. 18-24 (even), Sleaford-street; No. 1, Freke-road, Wix's-lane, Battersea; and a site in Gipsy-road, adjoining the Salter's Hill Board School (12). East Lambeth—No. 12, Ann's-place, adjoining the George-street Board School, Camberwell (1). Hackney—Nos. 1-4, Rutland-road, with the varnish works, abutting on the Lauriston-road Board Schools; and the Mission Hall, Tottenham-square, with Nos. 68-70, Tottenham-road (2). Greenwich—Nos. 23-33 (odd), Blackheath-road; land on the southern side of Mayston-crescent, Glenister-road; No. 48, Rowland-grove, Sydenham Hill-road; and Nos. 182-4, Maxey-road, Plumstead (4). Chelsea—Land with houses, forecourts, &c., having frontages to Tetcott-road, Burnaby-street, and Lots-road; Nos. 91-3-5, Marlborough-road with Nos. 91-3-5, Keppel-street, Chelsea; a strip of land on the northern side of Beaufort, otherwise Sedlescombe-road, Fulham; Nos. 1-5, Middle-row, with their gardens, &c., and land in South-row, adjoining the Middle-row Board School, Kensington; and land on the eastern side of a proposed continuation northwards of Frithville-gardens, *or* lands adjoining the Ellerslie-road Board School premises, with a part of Occupation-road, Hammersmith (5). Finsbury—Nos. 38-9, Clerkenwell-close; No. 6, Barnsbury Park; Nos. 29-39 (odd), Hanley-road, with Nos. 26, 40-2-4-6, Grenville-road, and garden-ground in Grenville-road; Nos. 48-70 (even), Scholefield-road, with Nos. 43-5, Nicholay-road; Nos. 150-66 (even), Cloudesley-road; and No. 40, Romilly-road, abutting on the Ambler-road Board Schools, Islington (6). The Board recently resolved to commit to the care of the London County Council the rehousing of occupants who will thus be dispossessed of their tenancies.

Correspondence.

To the Editor of THE BUILDER.

GRUNDY'S FLUSHING CISTERN.

SIR,—In regard to your article on our exhibit at the Sanitary Conference, Water Fittings Exhibition, we desire to call your attention to the following points:—

I. You state that "the apparatus is worked *by the turning* of a two-way valve." This is not so, as the valves are lifted, but first closing the outflow passage before opening the inlet valve, and vice versa, and thereby effectively preventing any waste.

II. The cistern, or flushing tank, standing empty until used is omitted. This we claim as one of its great advantages, being a sure protection from freezing.

III. "That the discharge lacks the drive of the syphon of other flushing tanks." We maintain that as good or better drive is given by the expanding of the compressed air within the automatically closing tank, given at the start of the flush, as is the case by the drive of the syphon. Having of late tested the flush, we find that two gallons can be discharged within three to six seconds according to pressure ranging from normal to 55 lbs. to the square inch.

D. GRUNDY, Manager,
Sanitary Appliance Syndicate.

*** No. 1 is a mere question of accurate wording. We saw no section of the valve. No. 2 is an important point in favour of the cistern, which we omitted to mention. In regard to No. 3 our opinion is not altered. No doubt there is an impetus given to the *start* of the flush by the expansion of the cushion of compressed air at the top of the cistern, but the depth of this can be but small, and after this cushion of air has resumed its normal condition, the rest of the discharge is by gravitation alone, and should require a good head to make an efficient flush. The cistern is an admirable one, and we recommend it strongly—only with this precaution.—ED.

The Student's Column.

GAS AND GAS FITTINGS.

20.—THE RELATIONSHIP BETWEEN THE GAS VENDOR AND THE GAS CONSUMER. RECENT CONCESSIONS. HOW TO READ THE METER. HOW TO ASCERTAIN THE RATE OF CONSUMPTION OF ANY GAS-CONSUMING APPLIANCE.

DURING the last ten or fifteen years a remarkable change has in many districts occurred in the attitude of the gas manufacturer to the gas consumer.

Formerly a gas company considered its work satisfactorily completed when gas had been carried to the consumer's meter. If, after the gas had passed the meter, the consumer through ignorance consumed the gas in wasteful burners, it was not to the interest of the gas company to teach him how to obtain more light or heat with a smaller consumption of gas. That was the opinion at one time commonly expressed by officers of gas companies.

With the passing of the nineteenth century, however, a radical change was witnessed in the business methods adopted by many gas companies and gas-producing Local Authorities. The gas vendor of the present day realises that it is to the interest of the shareholder as well as of the consumer to aid the consumer to obtain the highest possible efficiency in light, heat, or power, as the case may be, from every cubic foot of gas consumed. The introduction of leaky supply pipes and wasteful burners into a consumer's premises by an incompetent local ironmonger, whose opinion of the value of a burner is entirely dependent upon his rate of commission, is no longer viewed with equanimity by the gas manufacturer.

Managers of gas undertakings now vie with one another in devising new schemes for popularising the use of gas both for domestic and industrial purposes; but each company has its own rules as to the extent to which it will assist consumers in obtaining an efficient gas supply at small initial cost, and as to the class and variety of gas-consuming appliances which it will let out on hire or lend to consumers without charge. The following list of concessions which have already been granted by one or more companies or gas-producing Local Authorities shows that some gasworks managers have already recognised the necessity of adopting modern business methods, and will indicate to the consumer the kind of assistance he may hope to obtain from the gas vendor:—

1. Gas Supply Pipes.—Many gas companies will provide and fix all gas pipes of any size and for any purpose at cost price, while a few will supply and fix the pipes free of charge. As most gas companies keep a large staff of competent fitters constantly employed upon this class of work, it is usually a good policy to have the fittings put in by the gas company's men.

2. Flat Flame Burners for Lighting Purposes.—In some cases these are supplied free of charge, and in others at cost price.

3. Incandescent Gas Burners.—These are in some cases supplied by the gas company at a lower price than that charged by shopkeepers, and in several cases the gas company undertake to maintain incandescent burners in good condition, and renew all mantles and chimneys whenever necessary at a nominal charge.

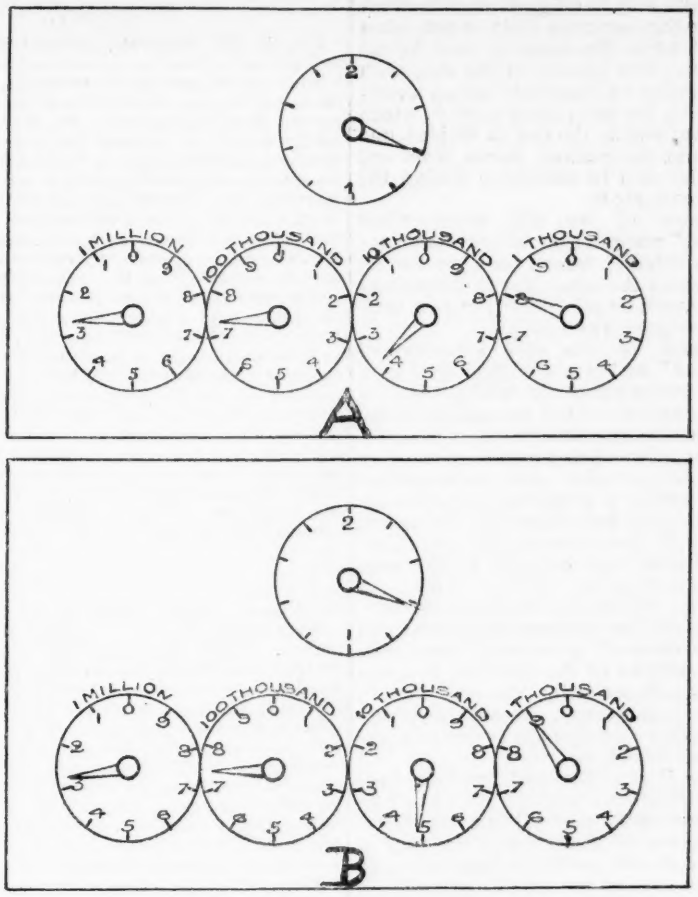


Fig. 52.—Index on Consumer's Meter, showing a consumption of 273,800 cubic feet at A, and of 274,900 cubic feet at B.

4. Gas Fires, Stoves, and Cookers.—These are let out on hire by most gas companies at a small charge. The rental for a fire for a dwelling-room of ordinary size is usually from 1s. 6d. to 2s. 6d. per quarter, and for a domestic cooker of moderate size from 2s. to 3s. per quarter. A few gas companies will lend these appliances to consumers without charge.

5. Ring Burners.—Small ring burners, suitable for boiling a kettle of water, are in many cases lent to consumers free of charge.

6. Gas Engines.—At High Wycombe these may be obtained on the hire-purchase system or on the continuous hire system. Few, if any, other gas companies have, however, yet undertaken to supply these on any terms whatever.

7. Periodical Inspection of Fittings.—Some companies now undertake without charge to keep and maintain all ordinary fittings in a clean and efficient condition. Inspection is made either upon receipt of request or by periodical visits. In most places the officers of the gas company will examine a consumer's fittings upon special request without charge.

All this "free-of-charge" business must, of course, be paid for eventually in the price paid for the gas, but by minimising the danger attendant upon the use of gas by periodical inspection of the fittings by competent officers of the gas company, by showing the consumer how to obtain the greatest efficiency from the gas with a minimum pollution of the atmosphere, and by assisting him to obtain appliances at low cost which he would otherwise reject, there is little doubt that real progress has been made since the time when the internal gas fittings of buildings were left to men who sometimes were incompetent fitters, and frequently were quite ignorant of the most elementary laws relating to the combustion of gas.

Reading the Meter.—The reading of the dials on an ordinary gas-meter is an extremely simple process; but many consumers neglect to watch the meter because the interpretation of the indications is thought to require special knowledge.

To ascertain the rate of consumption per day, per month, or per quarter, as the case may be, it is necessary to make a record of the position of the pointers on the dials at the commencement of the period and also at the end of the period, and to subtract one figure from the other. In fig. 52, for example, the positions of the pointers are shown at the commencement of a week at A, and their positions at the end of the week at B.

The dial with only two figures upon it which is seen above the four main dials is not taken into account when the meter is read by the gas inspector. The pointer of the dial wi h the superscription "1 thousand" makes a complete revolution for every 1,000 cubic ft. which pass the meter, and as the dial is divided into ten equal parts, the pointer moves from one numeral to the next in succession during the passage of 100 cubic ft.

The pointer of the dial superscribed "10 thousand" makes a complete revolution for every 10,000 cubic ft. which pass the meter, and consequently the movement of the pointer from one numeral on this dial to the next indicates the passage of 1,000 cubic ft.

The pointer of the dial superscribed "100 thousand" makes a complete revolution for every 100,000 cubic feet which pass the meter, and consequently the movement of the pointer from one numeral to the next represents a consumption of 10,000 cubic feet.

The pointer of the dial superscribed "1 million" makes a complete revolution for every million cubic feet which pass the meter, and consequently the movement of the pointer on this dial from one numeral to the next indicates the passage of 100,000 cubic feet.

In fig. 52 the positions of the pointers when 273,800 cubic feet have passed the meter since the pointers were all at zero are shown at A, while the positions of the pointers, say, one week later are shown at B. The consumption indicated at B is 274,900. Therefore in one week 1,100 cubic feet (274,900-273,800) of gas have been consumed.

Testing the Rate of Consumption of any Gas-consuming Appliance.—The dial situated above the four main dials (fig. 52) on the meter affords a means of ascertaining the rate of consumption of any particular appliance and of the soundness of all the gas fittings within a building. The pointer of this dial makes one complete revolution for every two cubic feet of gas which pass the meter, and as there are ten equal subdivisions on the dial, the movement of the pointer from one subdivision to the next indicates the passage of a fifth part of one cubic foot of gas. Larger meters have a dial divided into cubic feet, and the pointer makes a complete revolution for every five or ten cubic feet of gas which pass the meter.

When all the burner cocks are shut off and the main cock on the meter outlet is turned full on, the pointer on this dial will remain quite stationary if the pipes and fittings are gas-tight, but will change its position if a leakage of gas is occurring at any point.

Having ascertained that all the fittings are gas-tight by observing that the pointer remains quite stationary for a period of, say, fifteen minutes, the gas appliance to be tested should be put in action while all other burners are still kept shut off. The number of revolutions made in a fixed period, say ten minutes, should be noted, and the consumption per hour then be calculated.

If in ten minutes the pointer makes one complete revolution the consumption per hour is 12 cubic ft.; and if it makes four and a half revolutions in this peried the rate of consumption is 54 cubic ft. per hour. In this manner the rate of consumption of any burner or cooker or other appliance may readily be ascertained.

In addition to testing the rate of consumption of the different appliances in use it is a good practice to keep a record of the gas consumed from quarter to quarter, and if the consumption suddenly increases largely without apparent cause beyond the quantity consumed in the corresponding quarter of the previous year, to send the meter to be tested at one of the public meter-testing stations.

BOOKS RECEIVED.

EVERY MAN'S OWN LAWYER. By a Barrister. Thirty-ninth Edition. (Crosby Lockwood & Son.)

PROGRESSIVE DESIGN FOR STUDENTS. By James Ward. 5s. (Chapman & Hall.)

REFUSE DESTRUCTOR FOR NOTTINGHAM.—In reference to the application of the Nottingham City Council to the Local Government Board for sanction to borrow 21,000*l.* for the erection of a refuse destructor at the Eastcroft depôt, London-road, Mr. M. K. North, Local Government Board Inspector, held an inquiry at the Guildhall Grand Jury-room, Nottingham. on the 6th inst. Mr. Harris, of the Town Clerk's Department, Mr. A. Brown, City Engineer, and Mr. F. B. Lewis, his assistant, represented the Corporation.

OBITUARY.

MR. E. W. FRY.—Mr. Edward Wickens Fry, well known in Dover as an architect and surveyor, has just passed away at his residence, St. Martin's-terrace, at the age of sixty-five years. At one time he was in partnership with Mr. Whitley, and they jointly carried out several building undertakings, but for about thirty years he had devoted himself to his special professional pursuits as an architect and surveyor. He drew the plans for Messrs. Binfield Bros.' building in the Market-square, and for the new Waterloo House for Messrs. Hart & Co. He also, at a rather earlier date, designed and carried out the rebuilding of the counting-house, offices, and warehouses of Messrs. Dickeson & Co. He was for some time engaged in advising the Local Authorities at Deal and Walmer as to their drainage, and he carried out a good many alterations of premises at Sandwich. Mr. Fry had long been a member of the Kent Archæological Society. His hobby was to collect rare books relating to his own profession as an architect, and he had got together one of the best collections of Kentish histories and works on the archæology of the county of Kent to be found in any private library. During the agitation which preceded the carrying out of the large scheme of street widening in Dover he zealously worked for the scheme of widening the main thoroughfare, which ultimately proved successful, and when the old buildings on the south side of Biggin-street came down, many of the new elevations in that improved thoroughfare were from his designs. Mr. Fry commenced his public career as a member of the Town Council in the year 1881. Before his second term as a Councillor expired he was elected an Alderman, in November, 1886. He occupied a seat on the Aldermanic Bench for six years, and at the end of that term, in 1892, ceased to be a member of the Town Council. When the Kent County Council was constituted by the Act of 1888, he was selected as one of the Dover representatives, which post he continued to hold until the time of his death. He for many years was a director of the Dover District Permanent Benefit Building Society, and at the time of his death was Chairman of the society. Mr. Fry was President of the Dover Working Men's Institute from 1884 till 1887, and he gratuitously drew the plans for the enlargement of the Institute premises. He was up to the time of his death one of the trustees in whom the property of the Institute is vested. The funeral took place on the 8th inst. at Charlton Cemetery, when there were present at the graveside a large number of townsmen.—*Dover Express.*

GENERAL BUILDING NEWS.

UNITED FREE CHURCH, NEWLANDS, GLASGOW.—The foundation-stone has just been laid of the new United Free Church at Newlands, Langside. The site on which the new church is being erected is at the corner of Langside-road and Riverside-road. The church, which is cruciform in plan, having nave, transepts, and choir recess, is designed to accommodate 800. Part of the accommodation is provided in an end gallery, constructed over the main vestibule. The principal entrance is by a large porch at the south-east corner, the other two doors being intended for egress. From the porch access is obtained to the main vestibule, at the north end of which is the ladies' cloakroom. The main vestibule, closed in by swing-doors, is arranged as a general cloakroom. A cloakroom is also provided for the choir at the other end of the church, near the choir platform. Other accommodation provided is as follows:—A new vestry, large class-room for eighty, a kitchen for church purposes, and a house for the church officer. Recesses are formed at each side of the choir recess for a divided organ. The feature of the interior of the church will be the large aisle arches, with octagonal piers, all of free-stone. Owing to the wide span of these arches and their consequent height, a clearstory is dispensed with, and the church lighted at the side walls by large traceried windows placed high above the floor. The aisles will be simply passages, no pews being placed behind the stone piers. All the windows and doors will show stone jambs inside. The roof timbers will all be exposed, showing an open timber hammer-beam roof. The windows are to be double glazed. The heating is to be by hot-water pipes and radiators. The exterior of the church is to be built of Giffnock stone, and the stonework of the interior of Auchenheath stone. The work is being superintended by Mr. John Sim, inspector of works, and Mr. H. E. Clifford is the architect.

NEW CHAPEL, DONINGTON.—A new Primitive Methodist chapel has just been completed at Donington, Lincolnshire. The total cost, including the site and some buildings which are to be converted into schools, was 1,000*l.* The chapel was built by Mr. Barnsdale, of Donington, Mr. W. Grenfield, of Boston, being the architect.

CHURCH, MOYNALVEY, IRELAND. — The new Church of the Nativity, Moynalvey, county Meath, will shortly be dedicated. The architect of the new church is Mr. W. A. Byrne, Dublin.

CHURCH, PETERSHAM.—Lady Sudeley laid the corner-stone of a new church at Petersham Lodge on the 8th inst., to be erected at a cost of 10,000*l.*, with seating accommodation for 600. The building is Romanesque in style, with a nave, two aisles, and a tower. The architect is Mr. John Killy.

PACKINGTON CHURCH.—The Church of the Holy Rood, Packington, Leicestershire, was opened on October 22, after necessary repairs. A good specimen of Late, and rather Domestic, Perpendicular, it was thoroughly "restored" in the Georgian period, when the traceried windows and other decoration disappeared. Having again become dilapidated, it has now been repaired by the mending of stonework and roofs where absolutely necessary, and the area of nave and aisles has been refloored with plain red squares, and reseated. Some interesting discoveries were made of sepulchral slabs (sixteenth century), ancient flooring, and six magnificent bench ends, which were found, face downwards, in the mould under the seats. These are now once more bench ends in the nave, put back exactly as found, though some are rather decayed. The chancel is still untouched; it has a flat plaster ceiling cutting across the windows. The architects are Messrs. Prothero & Phillott, of Cheltenham; and the contractors Messrs. Collins & Godfrey, of Tewkesbury.

PLAISTOW HOSPITAL EXTENSION.—An extension of the Borough Fever Hospital at Plaistow was opened recently by the Mayor (Councillor A. Bishop, J.P.). The buildings occupy a site in Samson-street and Credon-road, and have been erected by the direct employment of labour by the Works Department, the architect being Mr. E. T. Hall, of London The total provision for patients' beds is 179, and all buildings for patients are kept above-ground on arched open basements. The Isolation pavilion contains fifteen beds on two stories in various wards—four beds, two beds, and one bed—all communicating directly with the fresh air, so that each ward may be separately used without reference to its neighbour. In the open air, but under cover, are the staircases, the sanitary accommodation, bath-rooms, larders, bath-docks, &c. Close to the entrance to the scarlet fever corridor is the admission room, where patients are received, examined, and bathed. They then are carried to the scarlet fever pavilions. The larger of the new pavilions contain thirty-one beds on two floors. There is no inside communication between the floors, the one being divided from the other by a concrete and steel floor with suspended ceilings. The pavilion contains two wards, each of fourteen beds, one two-bed ward and one one-bed ward, ante-room for the Sister, and two ward kitchens. From these staffrooms, observation windows enable a view to be obtained of all beds. There are on each floor, close to the staffrooms, a lavatory and water-closets for the use of the nurses, as well as a larder and linenroom. For the use of the patients there is a detached sanitary tower with a connecting bridge, having through currents of air. This contains, on each floor, two baths, two water-closets, four lavatory basins, and a nurses' sinkroom. Each large ward is 83 ft. long by 26 ft. wide, and 13 ft. high. In the centre is a Faience stack containing two fireplaces, and around the smoke flues are grouped aspirating flues for taking off the vitiated air near the ceiling. All the smoke flues are swept from the open basement. In addition to the fires there are hot water radiators enclosed in cases into which cold fresh air is admitted at the bottom and passes over the radiators, coming out at the top warmed to a temperature of about 60 deg. Under each of the fourteen beds there is an inlet ventilator for cold fresh air. The inlet of fresh air is regulated so as to change the whole volume of air in the ward three times in an hour. There are windows on both sides facing east and west as well as at the end. The floors are of teak, laid on concrete, and the walls are of cement, painted and varnished. All internal angles are concave. There are external staircases throughout the hospital leading to the upper floors of the wards, and lifts for the service of the first floor with coals, food, &c., and there are iron fire-escape staircases from each upper floor. The hospital throughout is lighted by electricity, fitted with fire hydrants, electric fire alarms, and with telephones affording means of communication between every part night and day. The Department (Mr. George Wise, Works Manager), has carried out the whole of the foundations and superstructure, the fire and sound proof floors and ceilings; the artificial stone dressings, pier caps, stairs and yard pavings; the plumbing, plastering, painting, and smith's work; the drainage and the sanitary arrangement. The specialists for electric wiring and lighting are Messrs. Young & Marten, Ltd., of Stratford; for boilers and steam piping, Messrs. Tinkers, Ltd., of Hyde; for heating and hot water supplies throughout the hospital, Messrs. Z. D. Berry & Sons, of Westminster; for laundry fittings, the Cherry Tree Machine Co., Ltd, of Blackburn; for kitchen fittings, Messrs. J. & F. May, of Holborn; for fire mains and appliances, Messrs. Shand, Mason, & Co., of Blackfriars; for electric bells, fire alarms, and telephones, Messrs. Croggon & Co., Ltd.; for asphalting, the Val de Travers Asphalte Paving Co., Ltd., and Messrs. Pilkington & Co.; for disinfectors and destructor, Messrs. Manlove, Alliot, & Co., Ltd., of Nottingham; for Bangor slating, Mr. J. J. Etridge, jun., of Bethnal Green; for lifts, Messrs. R. Waygood & Co., Ltd., of Borough, S.E.; for terra-cotta dressings, Messrs. J. Stiff & Sons, of Lambeth; and faience chimney stacks in the wards, Messrs. Doulton & Co., Ltd. The red brick facings have

been supplied by the Ibstock Collieries, Ltd.; the stock bricks by Messrs. Wakeley Bros.; blue lias and selenitic by Messrs. C. Nelson & Co., Ltd.; glazed bricks throughout by the Farnley Iron Co., Ltd.; Portland cement by Messrs. Martin, Earle, & Co., Ltd.; white glazed baths and lavatory basins by Messrs. Doulton & Co., Ltd.; white and brown glazed channels and gullies by Messrs. Broad & Co., Ltd.; drain-pipes by the Archer Sanitary Tube Co.; Palmer's patent flushing tanks by Messrs. J. Knowles & Co., Ltd.; glazed stoneware manholes by Messrs. J. Cliff & Sons, Ltd.; water-closets, water-closet apparata, and slop-sinks by Messrs. Dent & Hellyer; patent hot and cold water taps by Messrs. B. Rhodes & Son; floor-springs for doors and the opening gear for fanlights and rooflights by Messrs. Smith & Turner; stoves and chimney-pieces by the Albion Iron Co. and Messrs. Yates, Heywood, & Co.; oak parquetry floors by the Acme Wood Paving Co., Ltd.; rain-water gutters and pipes by Messrs. Macfarlane & Co., Ltd., and Messrs. McDowall, Steven, & Co., Ltd. The contract price is 98,000*l*.

HARROW SCHOOL CHAPEL.—The Governors of the School have approved of the plans prepared by Mr. Aston Webb for a committee which has recently been appointed for erecting a memorial to the forty-eight old Harrovians who have died in the South African campaign. The memorial will take the shape of a prolongation, eastwards, of the north and south aisles of the School Chapel, at a cost of about 6,000*l*. The chapel was built in 1857, after Sir G. G. Scott's designs; its stained glass forms a memorial to the twenty-five old Harrovians who fell in the Crimean war.

VILLA RESIDENCE, KIRKCALDY.—A villa residence, with stabling, coachman's house, &c., is being erected in Dysart-road, Kirkcaldy, from the designs of Mr David Forbes Smith, the following being the contractors for the work:—Masons, Messrs. Balfour Bros., Sinclairtown; joiner, Mr. Matthew Wishart, Kirkcaldy; slaters, Messrs. Currie & Cant, Kirkcaldy; plumbers, Messrs. Blyth & Dougall, Sinclairtown; and plasterer and tile works, Mr. Henry Masterton, Sinclairtown. This villa is the first to be erected on the land belonging to Mr. M. B. Nairn, just being opened up for building purposes. Mr. David Gilmour is contractor for the streets proposed to be made to the north and west of the site, and also for the laying-out of grounds, terraces, &c.

LIBRARY, HULL.—The new Central Library, which has been erected in Albion-street, Hull, at a cost of nearly 20,000*l*., was opened on the 6th inst. by Lord Avebury. The building has been erected in the Renaissance style from the designs of Mr. J. S Gibson, architect, London. The principal frontage is to Albion-street, and is executed in red brick from Leicestershire, and warm brown stone dressings and ornamental parts from Ancaster. The front consists of two stories, the lower one having square-headed windows surmounted by recessed arches, and the upper windows having balconies with wrought-iron balconettes, into the design of which has been wrought the City Arms. At the corner next the Church Institute, where the library buildings project some 12 ft. in front of the Institute, an octagonal tower has been carried up. The upper part of the tower is carried out in stone, and breaks into a domed form, with detached columns below the dome. The building extends right through to Baker-street, where a frontage one story high has been carried out in a style to correspond with the main front. Above the main entrance is a shield, supported by figures of a boy and girl, containing the name of the library, while in the gable is a figure of "Literature" carved in relief. The front entrance gives access to a wide entrance hall containing the main stair, which is divided from the entrance hall by stone columns and arches, and the floor of this hall is laid with marble mosaic. On the left is the ladies' reading-room, 25 ft. long by 14 ft. 6 in. wide. Next to this room is the magazine-room, 26 ft. long by 26 ft. wide. On the right is the librarian's room, 24 ft long by 15 ft. wide, which will probably also serve as a committee-room. Adjoining this room is placed the lending library, 62 ft. long by 34 ft. wide, and 20 ft. high to the top of the open roof. The whole of the bookstacks behind the counter are of oak fitted with Tonks' patent adjustable fittings, while a book lift and private stair communicate with the reference department on the first floor. Telephones are also fitted between the chief rooms and the librarian's room. A wide corridor runs from the back of the hall to the Baker-street entrance, and off this corridor, near to Baker-street, is the newspaper reading-room. This room is 47 ft. long by 32 ft. wide and 20 ft. high. The walls of the entrance-hall and corridor and stairs have been covered with tiles. The reference library is on the first floor, at the top of the main stairs, and is a room extending the whole length of the Albion-street frontage. The dimensions are 72 ft. long by 30 ft. wide, and 21 ft. high to the top of the ceiling. The centre part of the room is to be used by readers, and tables have been provided to accommodate forty, the ends of the room being fitted up as a book store. The general contractors for the work are Messrs. Armitage & Hodgson, of Leeds; the furniture and fittings have been executed by the North of England School Furnishing Co, of Darlington, from the architect's designs; the electric wiring, fittings, and telephones have been supplied by Mr. S. P. Wood, of Hull. The works have been supervised by Mr. W. H. Williams, clerk of works.

HOMES FOR INEBRIATES, WHALLEY, LANCASHIRE.—These homes are about to be erected on the Brockhall Estate, Langho, Whalley, for the treatment and care of inebriates committed by the various courts in the County Palatine. So far, plans have only been prepared by Mr. Littler, the County Architect, for the accommodation of females, the tender for which has just been let for the sum of 73,418*l*. Primarily, the Lancashire Inebriates Acts Board scheme provides for the erection of two separate institutions for the reception and treatment of inebriates—one for males and the other for females—and that these buildings shall be at a distance of some 500 yards from each other. Each of the institutions will be provided with a reasonable area for recreation purposes, which can be subdivided for classification purposes if thought necessary, and the whole enclosed by an unclimbable iron railing. It is proposed to erect the establishment for the females almost in the centre of the property, and that for males about 500 yards north-east thereof on the high ground in the vicinity of the Brockhall Farm. The main frontage to all these buildings will have a south-west aspect. The plans show that accommodation has been provided for fifty males and 100 females, but the administrative blocks have been so designed as to admit of an increase in the number of inmates up to 100 males and 200 females. In respect to the provision made for females, the administrative block will be centrally situated, and will contain the necessary offices, visiting and committee-rooms, provision for the officers and staff, together with kitchens, &c., stores, and dining-room for 200. The living accommodation will be provided in six blocks of two semi-detached houses, situate three on the east and three on the west side of the administrative block, so that twelve distinct and separate dwellings will be available, which will give all the facilities required for classifying the inmates. Each house provides accommodation for eight inebriates, with a dayroom, attendants'-room, scullery, boot-room, store, bathroom, and a separate bedroom for each inmate, and these houses will be approached from the administrative block by means of covered ways. The laundry, which will be used for the inmates and staff of both institutions, will be placed behind the administrative block for women, and in an adjoining building will be the steam boilers for heating the buildings, which will also supply the steam and hot water for the laundry and for the cooking apparatus in the women's institution. In regard to the accommodation for males, the scheme is similar to that proposed for the females, with a central administrative block and dining-room accommodation for about 100. It is anticipated that there will be three blocks of two semi-detached houses to accommodate forty-eight inmates to commence with, one of which can be used as a reception house. At the rear of this administrative block will be situate the electric generating plant for the lighting of the whole of the two institutions, and the boilers necessary for the purpose will supply the steam and hot water for heating and cooking in the men's institution.

GOLF CLUB HOUSE, HOLLINWELL, NOTTS.—The new club of the Notts Golf Club, situated at Hollinwell, has a view over the course towards Mosley Hills. The kitchen has been considered as the key of the plan, and is so situated as to serve direct the ladies' room, the dining-room, the gentlemen's club-room, and the dressing-room. The three first mentioned apartments are arranged along the front, and each has a door opening on to the verandah. A dressing-room is provided with lockers for nearly 200 members, and has at one end a radial drying closet for airing members' clothes, and also lavatory and shower-bath. Another lavatory is situated close to the main entrance, and accommodation is also provided for a steward, who will live upon the premises. The main building has been erected by Messrs. Gilbert & Son, builders, of East Kirkby, whose contract was 2,160*l*., and the plumbing and heating have been carried out by Messrs. Humphrey & Co., of Nottingham. Mr. A. Gaunt, of Bulwell, obtained the contract for lockers, &c., to the dressing-rooms, and Messrs. Dennett & Ingle, of Nottingham, have erected the professionals' shop and caddies' shelter. Mr. J. Harris and Mr. H. G. Watkins have acted as joint architects for the whole of the work.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Schmidt's Superheating Co. have appointed Messrs. Willcox Bros., 15, Norfolk-street, Sunderland, as their representative for Northumberland, Durham, and Yorkshire; and the Providence Engineering Works, Rhode Island, U.S.A., as their representatives for the United States.

DESTRUCTOR WORKS, BIRMINGHAM.—Mr. H. Percy Boulnois, Local Government Board Inspector, held an inquiry at the Council House, Birmingham, on the 6th inst., into the City Council's application to borrow 31,600*l*. for purposes of a refuse destructor, stabling, &c., at Rotton Park-street Wharf. The town clerk (Mr. E. O. Smith) informed the inspector that the Health Committee had for some time had under consideration the necessity for erecting additional furnaces for destroying refuse at the wharf in question. The two furnaces at present there were altogether inadequate to the work to be done, being capable of burning only about fifty tons per week of unscreened refuse. There was also a great need for stabling at the wharf. Evidence having been given, Mr. Boulnois inspected the site of the proposed buildings.

MEMORIAL CHURCH PLATE.—The ladies of Natal, in conjunction with sympathisers in England, have decided to commemorate the memory of those who have fallen in defence of the colony during the present campaign in South Africa, by presenting to the Cathedral at Pietermaritzburg a set of altar vessels, comprising two chalices with patens, two burettes, and flagon, all richly jewelled with precious stones. The necessary funds having been fully subscribed, a design by the Rev. Ernest Geldart has been accepted. The work of execution has been entrusted to Messrs. Taylor and Clifton, of London.

SOUTH KENSINGTON NATIONAL ART COMPETITION.—In the last of these competitions a gold medal for architectural drawing was awarded to a student for a drawing which was a direct copy of Mr. Paul's drawing of Malvern Abbey Church in the New Year's number of the *Builder* for 1897. The attention of the authorities at South Kensington has been drawn to this, and we understand that they have withheld the gold medal.

LINCOLN'S INN FIELDS.—In the course of next week will be sold at auction, by order of the Commissioners of H.M. Office of Works, the materials and fittings of Nos. 30A, 30-1-2, Lincoln's Inn Fields, and No. 2 Serle-street, together with the Post Office premises at the corner. The site was taken lately for the proposed enlargement of the offices of the adjoining Land Registry in Lincoln's Inn Fields.

APPOINTMENT OF SANITARY OFFICERS.—The Local Government Board has sanctioned the appointment of the following sanitary inspectors, viz., Mr. C. M. Longden in Finsbury, Messrs. A. W. Stiles and H. Quaintrell in Stepney, and Miss E. G. Gamble in Lambeth.

DISCOVERY OF AN ANCIENT CAVE DWELLING IN NOTTINGHAM.—An interesting antiquarian find has just been made while clearing the site of some old property on the south side of Hounds-gate, immediately opposite the lace factory of Messrs. Copestake. The workmen have come across an oblong rock chamber, measuring 8 yds. in length (from north to south), and about half as much in width. The height is about 7 ft. An idea was at first entertained that the place had been a chapel, but the geographical plan precludes that idea. In the centre is a finely-wrought pillar, oblong in plan, and conforming to the direction of the excavation. Unlike the vast majority of Nottingham rock excavations, this one exhibits detailed architectural features. The central pillar measures in diameter 44 in. by 16 in. at the capital moulding, which latter is 7 in. in height, and is divided into three horizontal courses, each semi-circular in section. The south end, or front, of the pillar is wrought with three semi-circular pillarets, almost touching each other, and extending down to the floor level. At the height of about 5 ft. their continuity is interrupted by the projecting capital moulding, above which they are continued as roof vaultings. The same style of groinings spring from the two sides of the column, and extend in splayed form across the roof. The latter, on either side of the pillar, presents a semi-circular elevation, and evidently indicates the Norman period of architecture. These side-roof mouldings are not continued down the sides of the pillar as in the front, however, and at the back, or north face, no mouldings appear either on column or roof. The projecting capital moulding alone is carried entirely round the four sides. The pillar is a little wider at the bottom than at the top. Though slightly damaged in places, on the whole the latter is in good preservation. At the opposite spring of the arches, or along the east and west sides of the apartment, and at the same level as the capital moulding, occurs a moulded projection or string-course, which, on the west side at least, yet retains a perfectly formed cable ornament, 3 in. in depth, which has suffered very little decay. This is not continued across the north end, while southward it terminates on either side, as though roughly broken off, two or three yards from the end of the excavation. The explanation appears to be that the latter has at some later date been enlarged in this direction. This view gains strength from the circumstance that the disposition of space is not symmetrical. The space between the arch springs on the west side is 5 ft. 2 in., and on the east side 5 ft. 4 in., or practically the same. Taking the opposite directions, however, while the distance between the pillar and the north end measures 7 ft. 3 in., that between the pillar and the south end measures 12 ft. 6 in. The present entrance is by a brick arched flight of steps at the south-west angle of the excavation, but the original entrance was possibly in the centre of the south end, for there a bricked-up space, large enough for a doorway, may be seen, and the rock on either side shows evidence of arrangements for barricading the same. Possibly this old entrance was reached by a pit or shaft, but later excavations may settle this detail. The chimney, affording proof of the former occupation of the place as a dwelling, is in the north-west

angle of the roof, and consists of a circular shaft like that of a well, about 2 ft. 6 in. in diameter. Its higher portion has been bricked around. The place has been utilised in modern times as a cellar, for not only is coal slack to be seen about the floor, but such dates as 1823 have been scratched in several places. Mr. English, the contractor for the work now going on, informs us this interesting place will be buried again in about a fortnight's time.—*Nottingham Guardian.*

CENTRAL TECHNICAL SCHOOL, LIVERPOOL.—In reference to the account of this building in our last issue, Mr. J. R. Scales of Liverpool, asks us to mention that he acted as clerk of works during the progress of the building.

CAPITAL AND LABOUR.

THE PENRHYN QUARRY. — Since work was resumed at the Quarry on June 11, the number of men employed has steadily increased, especially during the last month, which showed an increase of forty, the increase during September having been twenty-seven. These included twenty-nine slate-makers and thirty-eight labourers and daymen. The production of slates has similarly increased very satisfactorily, in fact, the output last month was at the rate of 34,000 tons per annum.

THE STRIKE OF SLATERS AT HULL AND BRIDLINGTON.—This strike has come to an end, in the twelfth week of the struggle. In February last the operative slaters and tilers of Yorkshire approached their employers, and submitted a code of working rules for the county. Subsequently, joint conferences were held, and in July last an agreement was arrived at, and a new code of rules established and signed by the representatives of both parties. These rules came into force on Angust 1, and August 17 the Hull men took exception to them and came out on strike. The Operatives' Amalgamation, true, it is stated, to their agreement with the employers, declined to support their Hull members, and refused them strike pay or travelling money. They also advertised for and drafted unionist workmen into the city to fill the places of the strikers. The Yorkshire employers drafted their senior apprentices into Hull, as also did other members of the National Association of Slate Merchants and Slaters, until a superabundance of labour obtained. The men then made overtures for a "conditional" surrender, but to no purpose. They eventually attended before their District Executive Council, signed the rules, agreed upon terms for repayment of the outpocket expenses occasioned by the dispute, and gave an undertaking to abide by the ruling of the District Committee in the future. Consequently the Hull employers have opened their yards, and taken on such of the men as they had vacancies for.

LEGAL.

BUILDERS' LIABILITY UNDER THE WORKMEN'S COMPENSATION ACT, 1897.

THE case of Alice Knight *v.* William Cubitt & Co came before the Court of Appeal composed of the Master of the Rolls and Lords Justices Stirling and Mathew on the 7th inst., on the appeal of the defendants, the well-known firm of builders and contractors, from the award of the County Court Judge of Brompton under the Workmen's Compensation Act, 1897, the applicant being the widow of a man killed by an accident arising out of, and in the course of, his employment as a "housebreaker."

It seemed that Messrs. Cubitt & Co. entered into a contract with Messrs. Woolland to alter two houses known as Nos. 16 and 17, William-street, Knightsbridge, and under the contract No. 17 had to be demolished and rebuilt. A sub-contract was entered into by Cubitt & Co. with a house-breaker named Clements, the latter undertaking the demolition of the house. Knight was in the employment of Clements, and while engaged on the demolition of the building he was by an accident killed. The building was originally over 30 ft. in height, but at the time of the accident had been reduced to about 11 ft. in height. The party wall between Nos. 16 and 17, however, remained standing, and it exceeded 30 ft. in height. It was said that Cubitt & Co. habitually entered into contracts to demolish buildings and to rebuild them, but they never did the work of demolition themselves, always entering into a contract with a housebreaker to do this part of the work. The County Court Judge held that Cubitt & Co. were liable under the Act, and awarded the applicant 278*l.* compensation. From this decision Messrs. Cubitt & Co. now appealed.

Mr. Ruegg, K.C., and Mr. Minton-Senhouse appeared for the appellants; and Mr. Edmond Browne and Mr. Valentine Browne for the applicant (the widow).

Mr. Ruegg contended that as the work of demolition was merely ancillary to and formed no part of the trade or business carried on by Cubitt & Co., the case came within the exception in Section 4 of the Act. Messrs. Cubitt & Co. never demolished buildings, so that the demolition was no part of their trade or business. The learned counsel also contended that the employment of the deceased man at the time of the accident was not on a building exceeding 30 ft. in height, the building then being about 11 ft. in height. It had been decided that the Act did not apply to employment on a building which was being constructed, but which at the time of the accident did not exceed 20 ft. in height, though when completed it would exceed 30 ft. in height (Billings *v.* Holloway). The same rule therefore applied to the demolition of a building. The learned counsel further contended that Messrs. Cubitt & Co. were not "undertakers" within Section 7, Sub-Section 2, of the Act.

Without calling upon counsel for the applicant,

The Master of the Rolls, in giving judgment, said he was of opinion that the appeal must be dismissed. They had two, three, or four points discussed, but those that impressed themselves most on his lordship's memory were (1) that the term "undertaker" ought to be so construed as to exclude Messrs. Cubitt & Co. from liability in this case; (2) that the work to be done by Clements, the sub-contractor, who employed the injured man in the work he was doing, was ancillary to and not the main work that Messrs. Cubitt & Co. had undertaken; and (3) that the building on which the man was engaged in demolishing was not 30 ft. high at the time of the accident. He would deal with the points in the inverse order, the last argued first. They had heard the finding of the learned County Court Judge that the building on which the man was engaged was over 30 ft. high at the time of the accident. That was a finding of fact, and all this Court had to do in dealing with that question was to see whether there was any evidence on which the Judge could find that the building was over 30 ft. high at the time of the accident. What the man was engaged in doing was working on a building which was being demolished, and a substantial part of it, viz., the party wall, which was an essential part of the building when it existed as a building, was standing to a height of more than 30 ft. It appeared from the evidence that what the man was actually working on at the time of the accident was this party wall, and thus working on a substantial part of the building which remained and was not demolished and was more than 30 ft. high. His Lordship could not say that the learned Judge was not entitled to find that a substantial part of the building was more than 30 ft. high at the time of the accident. So much for that point. Then as to the "undertaker" point. It was said that Messrs. Cubitt & Co. were not "undertakers" at all because there was evidence that they did not usually themselves, by their own workmen, deal with the demolishing of buildings. But his answer to that was that it was, on the evidence, a part of their business to demolish. It might be that Messrs. Cubitt & Co. did not regard it as their special business, but they could not undertake to build without demolishing at all. Here they contracted to demolish certain buildings with a view to erect another building on the site, and they also contracted to alter or make alterations in the other building, which was not to be pulled down. In their contract they undertook both obligations, and that, from the evidence, was their usual practice. He thought that was evidence that Messrs. Cubitt & Co. were "undertakers" within the meaning of the Act. He construed the word "undertake" in this Act by reference to the Act itself. It might have a different meaning in other Acts of Parliament.

Lord Justice Stirling concurred.

Lord Justice Mathew, who also concurred, said he had never been able to entertain any doubt that Messrs. Cubitts, as part of their business, undertook to demolish the house in question. It was, as had been said, a matter of convenience to the firm to make a sub-contract with a sub-contractor who employed persons called "housebreakers," as Cubitt & Co.'s workmen were usually employed to build, and they might not be as skilful in that particular work as those whose business it was to demolish. The only other point he need refer to was as to the height of the building. The Court had the finding of the County Court Judge on the subject, and his lordship should infer that he had more evidence before him than appeared on the note. A witness in the case had stated that at the time of the accident he was working at a big piece of the party wall, and that the deceased man was working a foot away from him. He thought there was abundant evidence on which the County Court Judge could find that the deceased man was employed in demolishing a building more than 30 ft. high at the time of the accident, and for those reasons he considered the appeal should be dismissed.

The appeal was accordingly dismissed with costs.

CASE UNDER THE PUBLIC HEALTH ACT.

THE case of the King *v.* Maude and Another came before a Divisional Court of King's Bench, composed of the Lord Chief Justice and Justices Darling and Channell on the 8th inst., in which Mr. Roskell appeared to show cause against a rule nisi for a *certiorari* to bring up and quash a conviction of the Guardians of the Hunslet Union for not complying with a certain by-law made under Section 157 of the Public Health Act, which required them to deposit the plans for a new workhouse with the local Sanitary Authority. It appeared that the guardians were building the workhouse by the order of the Local Government Board, and it was contended that the by-law did not apply to such a case. The rule nisi had been obtained on the grounds that the Justices had no jurisdiction and that the service of the summons was not sufficient.

At the conclusion of the arguments their Lordships on the question of service thought that the rule should be made absolute, so that the proceedings could be commenced again *de novo*.

The rule was accordingly made absolute, but without costs.

Mr. Brooke Little appeared for the Guardians in support of the rule.

THE MEASUREMENT OF BUILDINGS UNDER THE WORKMEN'S COMPENSATION ACT.

THE case of McGrath *v.* Robert Neill & Sons came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Stirling and Mathew, on the 8th inst., on the appeal of the defendants (the employers) from the decision of the County Court Judge of Manchester under the Workmen's Compensation Act, 1897. The case raised the question as to the proper point at the bottom of the building to be measured from, so as to decide under Section 7, Sub-Section 1, of the Act whether the building at the time of the accident exceeded 30 ft. in height.

The applicant was a workmen in the employment of the defendants, and was so injured in an accident which arose out of and in the course of his employment. The only question to be decided was whether the building on which the accident happened exceeded 30 ft. in height. The measurements taken and proved before the County Court Judge showed that from the bottom of the footings above the concrete foundations to the top of the building was 33 ft. 2½ in.; from the top of the footings to the top of the building, 31 ft. 2½ in.; from the basement floor to the top of the building, 29 ft. 10 in.; and from the level of the street to the top of the building, 20 ft. 5⅜ in. Some evidence was given at the trial that at the time of the accident the footings were covered in. The County Court Judge thought that the standard of measurement to be taken was from the bottom of the footings, and as this measurement showed a height of more than 30 ft., he made an award in favour of the applicant. The employers now appealed, on whose behalf it was contended that the proper place to measure from was from the level of the ground where the foundations had been covered in.

Without calling upon counsel for the applicant (the respondent on the appeal), the Master of the Rolls, in giving judgment, said that in his opinion the proper measurement to be taken was a question of fact in each case, provided there was evidence to support the finding. The fact that part of a building was below the level of the ground did not prevent it being over 30 ft. in height. From the evidence it seemed that probably the footings were covered in, but his lordship could see no evidence that there was more than a flooring at the top of the footing. The presumption from the evidence was that the flooring at the time of the accident had not got beyond that stage. His lordship thought that the building should have been measured from the top of the footing, and as the building then exceeded 30 ft. in height the applicant was entitled to succeed.

The Lords Justices concurred, and the appeal was dismissed with costs.

Mr. Clavell Salter appeared as counsel for the appellant, and Mr. McCleary for the respondent on the appeal.

EMPLOYERS' LIABILITY ACT:

ASSISTING IN WORK WITHOUT INSTRUCTIONS, AND THE CONSEQUENCES.

AT Brompton County Court, on Monday, before Judge Stonor and a jury, Albert Clark, a builder's labourer, 7, Petley-road, Fulham, S.W., brought an action under the Employers' Liability Act, 1880, against Mr. James Wendon, builder, 1, Danehurst-road, Fulham, claiming damages in respect of personal injuries sustained, owing, it was said, to negligence on the part of the defendant or his servants.

Mr. R. S. Nolan, counsel, appeared for the plaintiff, and Mr. J. W. Moyses, counsel, defended.

Counsel for the plaintiff explained that in May last the plaintiff was employed by the defendant as a builder's labourer on the Beaufort House Estate, North End-road, S.W. On May 10 the man was assisting in digging a trench which had reached a depth of about 10½ ft., but had not been "timbered" or strutted, to prevent the sides falling in. The soil was soft and sandy, and, of course, was more likely to fall than a heavier soil. It appeared that before dinner time the foreman told the men working in the hole to timber the hole as soon as they came back at half-past one. It appeared also that there was a deficiency of timber on the job, and this accounted for the strutting not having previously been done.

As the plaintiff was assisting in the strutting, one side of the hole gave way, causing a large piece of timber to fall upon him. The man was thrown heavily upon his back, and the piece of timber injured a bone in the region of his left eye. The man was detained as an in-patient at the Queen's Jubilee Hospital for four days, and for four weeks he was incapacitated for work.

The plaintiff bore out his counsel's opening statement. He added that the hole was in treacherous soil of sand and stones. He did not hear the foreman say anything about the strutting, except that as soon as they came back from dinner two of them were to put in the timbering. He maintained that the strutting in such a hole should be put in before the hole exceeded 6 ft. in depth. There was plenty of timber on the job, but he did not know whether the foreman would let them use it. In work of the kind in question it was usual to employ men receiving extra payment for strutting the hole. There were no such extra-paid men to do the strutting at the time of the accident.

Cross-examined: It was true that the hole had a battering, making it narrower at the bottom than at the top, the object of which was to prevent the sides falling in. He denied that two of the other men were told by the foreman to do the strutting, and that he was directed to do nothing but the digging.

Walter Osborne, a builder's labourer, 87, Bayonne-road, Fulham, who was working in the hole at the time of the accident, stated that the foreman told him and another man, named Cattermole, to do the "timbering up." The foreman did not tell all the men in the hole to assist in that part of the work. With the exception of himself and Cattermole, the men were told to get on with the digging. There was plenty of timber about which could have been used for strutting up the hole.

The Judge: I do not think it is any use going on with this case. There must be a non-suit. The man might have been entitled to claim under the Workmen's Compensation Act, but if he had recovered compensation I should have given costs against him.

Mr. Moyses: I do not think he could have recovered under the Workmen's Compensation Act, because there was no building 30 ft. in height, nor steam and other mechanical power in question. I think the case is quite outside the Act. I do not now, ask for costs.

CASE UNDER THE LONDON BUILDING ACT, 1894.

THE case of the King *v.* D'Eyncourt came before the Court of Appeal, composed of the Master of the Rolls, and Lords Justices Stirling and Mathew, on the 11th inst., upon arguments against a rule *nisi* which had been granted by this Court, calling upon Mr. D'Eyncourt, the Metropolitan police magistrate, to show cause why he should not state a case for the opinion of the Court.

It appeared that a Mr. Jas. Ellis had been convicted by the magistrate on a charge of having committed an offence under the London Building Act, 1894, viz., by erecting a building beyond the general line of buildings in a certain street. The magistrate made an order for the demolition of the building in question, and refused to state a case on the ground that no question of law was involved. The Divisional Court refused an application for a rule *nisi* and a writ of *mandamus* commanding the magistrate to state a case, but on a similar application made to the Court of Appeal the rule was granted.

Mr. Horace Avory, K.C. (with him Mr. Daldy), who appeared to show cause against the rule being made absolute, took the preliminary objection that as this was a criminal cause or matter the Court of Appeal had no jurisdiction to hear it.

Mr. Freeman, K.C. (with him Mr. R. Cunningham Glen) argued that it was not a criminal cause or matter within the meaning of Section 47 of the Judicature Act, 1873.

Their Lordships, however, held that it was clearly a criminal cause or matter, and that they had no jurisdiction to entertain it, and discharged the rule accordingly, on the preliminary objection taken by Mr. Avory.

ANCIENT LIGHTS:

IMPORTANT DECISION OF THE COURT OF APPEAL.

IN the Court of Appeal, composed of the Lord Chief Justice and Lord Justices Vaughan-Williams and Romer, on the 13th inst., a considered judgment was delivered in the case of Warren and Others *v.* Brown, on the plaintiffs' appeal from the judgment of Mr. Justice Wright in the Queen's Bench Division on August 8, 1900. The case, which was reported in the issues of the *Builder* of August 11, 1900, and November 2 last, raised with regard to ancient lights the question whether the right which is acquired by statutory prescription is a right to the continuance of substantially the whole quantity of light which has come to the windows during the twenty years, or is limited to a sufficient quantity of light for all ordinary purposes of inhabiting or business.

The facts of the case are shortly as follows:—The plaintiffs are the owner and tenant of a house in Leicester, and they claimed damages and an injunction in respect of the obstruction of the access of light to certain ancient windows in a room on the ground floor and another on the floor above, both rooms facing to the south. For a length of about 17 ft. in front of these rooms the defendant had raised his building from a height of about 20 ft 6 in. to about 26 ft., but had set it back about 2 ft. or 3 ft., so that the width of the street between the two buildings, which was about 17 ft., became about 19 ft. Mr. Justice Wright found, as a fact, that the defendant had not obstructed or diminished to any material extent, if at all, the light coming to the upper of the two rooms in question. With regard, however, to the four windows on the ground floor, he found that the defendant had materially diminished the light which the defendants enjoyed from the windows for twenty years past, but that abundant light remained for all ordinary purposes of inhabitancy or business. The plaintiff Baum, who was the tenant of the premises, had for less than twenty years carried on in the premises, and particularly on the ground floor, a manufacture of hosiery by means of machinery which required a very exceptional quantity and quality of light for the adjustment of filaments to fine needles Prior to this manufacture the manufacture of boots and shoes, which required good but not special or extraordinary light, was carried on in the premises. Mr. Justice Wright held that the defendant by his building had so diminished the light that it was materially insufficient during some part of the day for the special requirements of Baum's industry, and he found that the plaintiff's premises had throughout the twenty years before action been suitable for such a manufacture as that carried on by Baum. His Lordship decided that the plaintiffs had made out no case for a mandatory injunction or for damages, and gave judgment for the defendant with costs, but in case he should be held wrong in his law on appeal he assessed the damages at 100*l.* for the tenant and 200*l.* for the reversioners. Hence the present appeal of the plaintiffs.

The arguments on the appeal concluded on the 29th ult., when judgment was reserved.

Mr. Hugo Young, K.C., and Mr. W. H. Stevenson appeared for the appellants; and Mr. Warmington, K.C., and Mr. Neilson for the respondent.

Lord Justice Romer read the judgment of the Court, which was to the following effect:—In this case Mr. Justice Wright had found that certain of the plaintiffs' ancient lights had been substantially interfered with by the defendant's new building, and that they had thereby suffered substantial damage. On this finding one would have expected that judgment would have been entered for the plaintiffs, but the learned judge dismissed the action on the ground that notwithstanding the substantial diminution of the ancient light abundant light remained for all ordinary purposes of inhabitancy or business. The learned judge appeared to think that in law there was a sort of standard in the matter of light, and that if a house was extremely well lighted the light could be diminished so long as it was as useful for habitation or business as the average run of houses in that locality. That was an erroneous view of the law. If ancient lights were interfered with substantially and damage ensued, the persons injured were entitled to relief, and it was impossible to hold that the statutory right was not interfered with, merely because the house still came up to some standard of light required for inhabitancy or business. The plaintiffs were entitled to relief, and judgment must be entered in their favour for the amounts assessed. The defendants must pay the costs of the action and of the appeal.

THE LONDON COUNTY COUNCIL AND FIRE-RESISTING STAIRCASES.

THE case of the Consolidated Properties Co. *v.* Chilvers came before a Divisional Court of King's Bench, composed of Justices Ridley and Bigham, on the 13th inst., on an appeal by the company from a conviction obtained at the instance of the London County Council for non-compliance with a notice given under Section 17 of the Factories and Workshops Act, 1891, calling upon the company, which carries on business at 112, Queen Victoria-street, to provide a new staircase of fire-resisting materials to be constructed on the company's premises, connecting with all the floors and the roof. It appeared that the premises were occupied by tenants of the company, who were not using them for a factory; and in order to provide the new staircase it would be necessary to interfere with the ground floor, and this could not be done, as the company said they could not interfere with the tenants, and that therefore it was impossible for them to comply with the notice. On proceedings being instituted at the Mansion House against the company for not complying with the notice, the company proposed to give evidence of these facts, but the magistrate refused to hear it, and fined the company. An appeal was then lodged by way of special case to the Divisional Court, but their Lordships directed the matter to stand over till an arbitration had been held as to what was necessary to be done under the notice. The arbitrators made certain recommendations which the company said they were prepared to carry out, and the object of the present application was to quash the conviction on these terms.

On behalf of the London County Council it was urged that the proper order to be made on the special case was that the conviction should be affirmed and the appeal dismissed with costs.

In the result their lordships allowed the appeal, and quashed the conviction, but without costs.

Mr. Bray, K.C., and Mr. Tudor Howell appeared for the appellants; and Mr. Dumas for the respondent.

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

12,762.—AN ELECTRICAL WATER HEATER: *A. E. Greville and A. W. Greville.*—The water ir caused to flow on to a metal plate within the geyses and down the heated electrical conductors to another plate and so to the outlet, both plates being mounted upon insulating brackets, and suitable terminals being provided. The wires may be either hollow, or grooved, or tapered, &c., and also encased in order to obviate short circuiting.

12,782.—CONTRIVANCES FOR WATER-CLOSETS: *F. A. Fergusson*—The inventor provides a raised foot-rest, and fashions the seat with a curve which is sloped downwards from the front.

12,797.—TAPE MEASURES: *F. J. Brunello.*—The tape is drawn out between rollers, and a spring pawl is disposed in engagement with a ratchet-wheel upon the reel-shaft. The tape can be freely pulled only by pressure upon a projecting stud.

12,803.—CEMENT, LIMESTONE, AND OTHER KILNS: *H. Schmidt.*—The material is fed from a rotatory drying and preliminary heating tube into a chamber, and thence is passed into the burning-chamber, its quantity being regulated with a slide. There are openings for the supply of fuel and the introduction of tools, and flues which carry the products of combustion through a tube into the chimney.

12,816.—A ROAD-SCAVENGER: *W. H. H. Miller.*—The front of the machine, which is worked by hand, scrapes, and a brush mounted behind sweeps, the road. Curved arms, fitted with scales and passed through screw-clamps, adjust the brush, which is to be lifted or lowered in a frame that swings upon an axle, and is driven with gear from the main carrying wheel; the sweepings pass over an apron into one receiver, and the scrapings are thrown into another receiver. The former receiver has a loose front, and is attached to the scraper with a turn-button so that the two will rise together and, by means of a cord around a roller, will draw a scraper forwards for clearing the dustpan.

12,834.—WASHSTAND FITTINGS: *F. Wilson.*—The washstand is fitted with a basin which has an overflow and a plug for discharge to the waste-pipe. At the back is arranged a cistern having a lid and a discharge-pipe and cock. The cistern may be wholly concealed by the looking-glass, or one side of it may be placed behind the drawers. In another form it may be carried separately by a bracket on the wall.

12,846.—SAFETY LAMPS: *J. Glasmachers and C. Müller.*—The electrodes of a portable secondary-battery lamp consist of pierced leaden tubes which are filled with oxide paste, and are set in two metallic cases having screw covers lined with some non-conducting material. Tubes upon a glass cylinder around an incandescent lamp connect the cases. The cells are connected to the lamp and a switch, as well as to the charging-terminals, by wires that pass through the tubes and behind the linings.

12,864.—CONSTRUCTION OF PARTITIONS, WALLS, &C.: *J. F. Golding.*—Netted or expanded lathing is made up into sheets, which are fastened with staples on to temporary supports, and one side is coated with plaster, concrete, or cement. The supports are taken away when the coating has dried, and then the other side of the lathing is similarly coated. For adjusting the length of a pair of telescopical boards which press against the ceiling and floor, U-shaped guiding clips are affixed to the boards and camped with wing nuts and screws, or a guiding clip having two loops takes a toggle-jointed support, being pivoted on to a loose bracket, which, if the joint is forced inwards, is tilted so as to grip one of the boards.

12,887.—A CREMATORY FURNACE: *S. Willoughby and H. H. Fox.*—The retort is heated with liquid-fuel burners that are also fed with air and steam, whilst the resultant gases pass through a water-curtain into a chamber. There is an air space around the retort, and the furnace is constructed in the vault of a mortuary chapel which has a permanent grave, at the bottom of which is a trolley upon which the coffin is laid before the process of cremation.

12,918.—CONSTRUCTION OF GATES FOR WEIRS: *W. B. Skotnicki and Count A. F. Ostrowski.*—A chain joins a sluice-gate to the end of a lever which is pivoted on to a framework secured to the piles, a float is fastened adjustably to the other end of the lever for regulating the position of the sluice-gate. If the gate should be suddenly raised, and to an excessive height, the inclined portion of a hook upon the gate will move a pole aside out of its retaining grooves, then a chain and counter-weight will lift the pole into engagement with the hook and so lift the gate into its proper place for floods. By another arrangement the gate can be attached directly to the end of the lever, and the float is in

that case fastened to the middle. Guides and a rod pivoted on to the framework limit the horizontal movement of the float, and it may be contrived that the fall of the counter-weight shall close a circuit and give a signal. The invention comprises a separate flood-gate of which the motion is restricted with stops and a chain.

12,925.—HEATERS AND RADIATORS FOR STOVES: *E. Soutter.*—These are devised for use with gas, hydrocarbon, or similar lamps or stoves about or above which the inventor places a series of water-tubes which are surrounded with a conical metallic funnel. The spiral tubes being connected to the heater, the radiator is filled from a vessel attached above it, and the products of combustion escape to a cowl upon the apex of the funnel. Other modifications are specified, by one of which a dome-shaped hood takes the place of the conical heating coil.

12,936.—PROCESS OF MOULDING TILES AND BRICKS: *M. F. Solon and W. Tellwright.*—An inclined block worked with a hand-wheel, an endless chain, a wheel-nut, and a screw lift and lower the bottom-plunger, which, after powdered marl or other cheap material has been filled into the mould, is lowered about one-sixteenth of an inch, when powdered clay is filled in above the marl, and the plunger is again lowered, a facing-glaze being put over the clay. The stem of the lower plunger fits in a socket of an inclined block, and when lifted with a treadle and lever will eject the brick or tile. An upper plunger can be employed for pressing the clay in one single operation, or the force may be exerted after each layer has been put into the mould, of which the depth can be increased with perforated and super-imposed plates. Confer also No. 225 of 1900.

12,938.—MECHANISM FOR LOCKS: *F. Legge.*—A boss upon the tail of the bolt works on a pin which is affixed in the casing, the arm of the bolt is worked by the arms of the follower, and above the bolt is a pin which carries the spring; behind the head of the bolt is a shield against dust.

12,944.—ELECTRICAL SWITCHES: *H. F. Clayton, T. Bell, and S. S. Berry.*—A boss of which the sides are flat and which is fitted upon the central pin carries the contact arms, the handle which embraces the arms is adjusted loosely upon the pin, and a quick break is effected by means of a pin that is regulated with a spring and slides within a recess in the base.

12,970.—PROCESS OF MOULDING BRICKS: *R. T. Hughes.*—Horizontal plungers that work through the open sides of the mould fashion indents or panels in the sides of the bricks, and in place of a slide for closing the mould the inventor adopts a cover mounted upon a vertical frame which has guides and is lifted and lowered with cams; a vertical rod that slides through a cross-bar on the frame carries the discharge-plunger, and with the lowering of the frame will lie upon the bed-plate, the mould being closed with the upper plunger. Confer also Nos. 6,239 of 1895, and 7,801 of 1899.

12,973.—AN ELECTRICAL INDICATOR: *Siemens and Halske A-G.*—For high pressures the inventors devise a metallic disc surrounded with a ring, the one being fixed and the other being mounted upon an axle, which is fitted also with a non-conducting pointer that traverses a scale, and is regulated by a spring. The ring and disc are oppositely electrified, the movable part being turned by the action of the charged air that streams from its tangentially-directed points. For the spring may be substituted a weight, and for the pointed disc a notched flat ring, and condensers and impedance coils connected with the indicator will afford compensation for variation of frequency of alternating pressures.

12,990.—FLUSH-WATER APPARATUS: *W. Franklin.*—A pipe from the crown of the bell-siphon extends to a pneumatic push, the long leg is trapped in the casing, and an air-escape pipe and a ball-valve are fitted on to the crown of the siphon. A part of the compressed air is forced out by the pipe when the push is worked, and when it is released the reduced pressure will cause the water to flow over the crown, and thereby set the siphon in operation.

13,029.—AN APPLIANCE FOR USE IN MOULDING BRICKS, &c.: *J. Koepff.*—The inventor seeks to furnish means of escape of surplus clay; he fashions the sides of the mould with bevelled meeting-edges, and with recesses for ornamental pattern-plates. The plungers are similarly bevelled. Set-screws and adjusting-screws fasten the sides of the mould in the box or casing.

13,047.—A FIRE-ESCAPE: *H. Behrens.*—The upper end of a ladder which turns upon a pivot at its middle point is attached to a balcony with a self-acting hook when it is needed for use; at other times it is to be turned into a horizontal position along the front of the house.

13,052.—CONSTRUCTION OF WALLS, &C.: *E. Prüss.*—Hoop-iron bands stretched at right angles to one another constitute a framework of which the rolled ends are fastened to hooks or staples in the beams, posts, walls, and so on; slabs, bricks, or tiles laid with mortar, in which the bands are embedded, are filled into the spaces between the bands. The mode of construction extends to outer walls and double walls. For a partition or garden wall is erected a wooden frame, of which one side is faced with tiles or bricks bound together with hoop-iron strips.

13,064.—A FIRE OR SIMILAR ALARM: *F. O. Schöppe.*—The expansion of a spring as it becomes heated effects its contact with the point of a screw, so as to close the circuit of an electrical bell; an index-finger upon the screw is to be set to a number marked upon a dial that denotes the temperature at which the alarm should be sounded.

13,072.—AN APPLIANCE FOR STAGE SCENERY: *F. G. Rossman.*—The inventor fashions the braces with hinged foot-irons that carry screws, of which the collars fit in recesses in the foot-irons; the angle of inclination of the braces may be changed at will and the screws will not be easily lost.

MEETINGS.

FRIDAY, NOVEMBER 15.

Architectural Association.—Mr. Max Clarke on "The Sanitation of a Country House." 7.30 p.m.
Institution of Mechanical Engineers.—8 p.m.

SATURDAY, NOVEMBER 16.

Dundee Institute of Architecture.—Visit to St. Andrews.

MONDAY, NOVEMBER 18.

Royal Institute of British Architects.—Mr. R. Anning Bell on "Mosaics," with lantern slide illustrations. 8 p.m.
Liverpool Architectural Society.—A collection of books on architectural subjects will be on view. 6 p.m.

TUESDAY, NOVEMBER 19.

Institution of Civil Engineers.—Further discussion on the paper by Messrs. W. Kaye Parry, M.A., and W. E. Adeney, D.Sc., on "The Discharge of Sewage into a Tidal Estuary;" and, time permitting, a paper to be presented for discussion, on "The Treatment of Trades' Waste Bacterially," by Mr. William Naylor. 8 p.m.

WEDNESDAY, NOVEMBER 20.

Society of Arts.—Opening address of the 148th Session, by Sir William Henry Preece, K.C.B., F.R.S., Chairman of the Council. 8 p.m.
Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.
St. Paul's Ecclesiological Society.—Mr. H. C. Richards, K.C., M.P., on "John Wesley in City Churches." 8 p.m.

THURSDAY, NOVEMBER 21.

Carpenters' Hall, London Wall.—Written examination on Sanitary Building Construction. 5 p.m.

FRIDAY, NOVEMBER 22.

Architectural Association Discussion Section.—Mr. G. H. Smith on "Canterbury Cathedral," illustrated by lantern views. 7.30 p.m.
Birmingham Architectural Association.—Mr. J. A. Gotch on "Architecture of the Eighteenth Century in England."
Glasgow Architectural Craftsmen's Society.—Mr. G. Herbertson on "Foreign Competition in the Building Trades." 8 p.m.

SATURDAY, NOVEMBER 23.

Carpenters' Hall, London Wall.—Viva Voce Examination in Sanitary Building Construction. 12 noon.
British Institute of Certified Carpenters.—Visit to the Vauxhall Bridge Works. 3 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 28.—By PROTHEROE & MORRIS (on the estate).

Clacton-on-Sea, Essex.—King's Parade, &c., 53 plots of building land, f.	£1,542
October 29.—G. NICHOLS, HOWES & Co. (at Chepstow).	
Shirenewton, Mon.—The Shirenewton Hall Estate, about 583 acres, f. (in lots)	20,455
October 31.—CHINNOCK, GALSWORTHY & CHINNOCK (at York).	
Thornton Watlass, Yorks.—Freehold farm and seven cottages, area 51 a. 2 r. 12 p., including the advowson and manorial rights	3,400
A freehold residence and 0 a. 3 r. 9 p., f.	300
Snape, Yorks.—Gebdykes Farm, 107 a. 1 r. 38 p., f.	2,400
Well, &c., Yorks.—Mowbray Hill Estate, 613 a. 1 r. 29 p., including the advowson	12,400
Holly Hill and 15 a. 2 r. 2 p., f.	1,700
Acclom House Farm, 437 a. 2 r. 31 p., f.	8,400
Well Hall Farm, 136 a. 1 r. 10 p., f.	4,600
Parnoby's Farm, 58 a. 3 r. 9 p., f.	1,300
Snape, Yorks.—Snape Langwith Farm, 116 a. 1 r. 19 p., f.	1,310
Low Grounds Farm, 209 a. 3 r. 38 p., f.	1,950
Well, Yorks.—Langwith House Farm, 458 a. 3 r. 13 p., f.	3,300
Well Manor House and 40 a. 0 r. 14 p., f.	1,460
House, smithy, and 16 a. 1 r. 31 p., f.	480
Various cottages and 28 a. 1 r. 5 p., f.	1,875
The Millbank Arms p.-h. and 0 a. 1 r. 30 p., f.	580
House, four cottages, and 11 a. 3 r. 11 p., f.	450
Six freehold houses and 12 a. 3 r. 6 p.	775
A freehold holding and 16 a. 1 r. 36 p.	370
A holding, three houses, and 10 a. 1 r. 32 p., f.	435
A freehold holding and 16 a. 2 r. 27 p.	630
Three strips of land, 3 a. 1 r. 18 p., f.	180
October 31.—By C. RAWLEV CROSS & Co. (at Shepherd's Bush.)	
Shepherd's Bush.—43, Wendell-road, u.t. 977 yrs., g.r. 6*l.*, r. 30*l.*	355
1, 9, to 17 (odd), Westwick-gardens, u.t. 60 yrs., g.r. 75*l.* 12s., r. 279*l.* 16s.	2,220
93, Godolphin-rd., f., r. 30*l.*	550
5 to 10, 12 and 20, Norland-rd., u.t. 65½ yrs., g.r. 64*l.*, r. 282*l.*	3,015
11, Tunis-rd., u.t. 70 yrs., g.r. 5*l.* 10s., e.r. 36*l.*	250
Hammersmith.—161, Blythe-rd., u.t. 75 yrs., g.r. 9*l.* 10s., e.r. 55*l.*	£550
November 2.—By W. B. HALLETT (at Goring).	
Goring, Oxon.—The Glebe, and 2 a. 2 r. 29 p., f.	3,500
A freehold building site, 3 r. 29 p.	1,000
November 5.—By MUSKETT & SONS.	
Wood Green.—Clarence-rd., Paraguay Cottage, f., r. 38*l.*	570
By ROBINS & HINE.	
Dalston.—3 to 10 and 19, Laurel-st., and 2, Victoria-grove West, u.t. 41, 21½, and 17 yrs., g.r. 24*l.* 10s.	1,410
Norwich Union.—Two leasehold redemption policies for 1,600*l.*, payable in June, 1914	300
Wimbledon.—23 to 28 and 31, Quicks-rd., u.t 78 yrs., g.r. 28*l.* 14s.	1,420
By JAMES LEWIS & Co.	
Tooting.—65, High-st., u.t. 67 yrs., g.r. 7*l.*, r. 32*l.*	230
Balham.—3, 23, and 29, Balham New-rd., u.t. 25 yrs., g.r. 14*l.* 8s.	320
3 and 5, Fernlea-rd., u.t. 64 yrs., g.r. 16*l.*, r. 85*l.*	690
44, Fernlea-rd., u.t. 64 yrs., g.r. 7*l.* 10s.	345
54, Bedford-hill, u.t. 62 yrs., g.r. 8*l.*	430
92, Rossiter-rd., u.t. 72 yrs., g.r. 10*l.* 10s., r. 36*l.*	220
Clapham.—134 and 136, Cavendish-rd., u.t. 25 yrs., g.r. 13*l.*, r. 64*l.*	300
FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).	
Richmond, Surrey.—Petersham-rd., the Compasses p.-h., u.t. 19½ yrs., r. 160*l.* (including mortgage)	4,790
November 6.—BUNCH & DUKE.	
Hackney.—220, Mare-st., f., e.r. 60*l.*	800
DOWSETT, KNIGHT, & Co.	
Notting-hill.—218 and 220, Walmer-rd., u.t. 27 yrs., g.r. 4*l.* 15s., r. 50*l.*	300
Thresher-pl., a range of stabling, u.t. 27 yrs., g.r. 3*l.*, r. 70*l.*	400
18, 20 and 22, Tobin-st., u.t. 27 yrs., g.r.	190
Regent's Park.—23, Park-cres., u.t. 16¾ yrs., g.r. 64*l.*, r. 350*l.*	2,600
Hyde Park.—5, Cleveland-sq., u.t. 45 yrs., g.r. 21*l.*, r. 150*l.*	1,760
51, Cleveland-sq., u.t. 47½ yrs., g.r. 20*l.*, r. 130*l.*	1,600
181, Gloucester-ter., u.t. 37 yrs., g.r. 2*l.*, r. 170*l.*	2,200
171, Gloucester-ter., u.t. 37 yrs., g.r. 2*l.*, r. 160*l.*	2,250
11 Porchester-mews, u.t. 37 yrs., g.r. 2*l.*, r. 35*l.*	330
By DUNN, SOMAN, & COVERDALE.	
Woodford.—Grove Hill-rd., f.g.r. 21*l.*, reversion in 83 yrs.	520
Upton Park.—Plashet-lane, f.g.r. 4*l.* 4s., reversion in 82 yrs.	100
By FOSTER & CRANFIELD.	
Thornton Heath.—152 to 162 (even), 176, 178, 180, 184, and 186, Frant-rd., f., e.r. 429*l.*	6,800
Brixton.—Mandrell-rd., f.g.r. 70*l.*, reversion in 83 yrs.	1,780
By MARK HUBBARD.	
Notting Hill.—5, Bonchurch-rd., u.t. 65 yrs., g.r. 8*l.* 10s.	390
54, Southam-st., u.t. 62 yrs., g.r. 7*l.*	300
Gray's Inn-rd.—10, Wilson-st., u.t. 10 yrs., g.r. 6*l.* 10s., e.r. 42*l.*	125
By J. & W. JOHNSON & Co.	
Walthamstow.—4 to 14 (even), Tower Hamlets-rd., f.	1,260
By C. SPARROW & SON.	
Finchley.—1, Eton Villas, f., e.r. 60*l.*	500
By WYATT & SON (at Chichester).	
Chichester, Sussex.—Rumboldswyke, freehold farm buildings and yard	300
26 and 27, Washington-st., f.	250
94, 97, 98, 99, and 100, Oving-rd., u.t. 923 yrs., g.r. nil	630
By BALLARD & MARSH (at Twickenham).	
Teddington.—Church-rd., Hill Rise and a plot of land adjoining, f.	600
SWAN WOODCOCK (at Stratford).	
Forest Gate.—158 and 160, Sherrard-rd., f.	800
November 7. By GLASIER & SONS.	
Hendon.—Hale-lane, Hale End Farm, 61½ a., f. and c.	6,100
Surbiton, Surrey.—4, St. Phillip's-rd., u.t. 66 yrs., g.r. 12*l.*, r. 50*l.*	410
By C. C. & T. MOORE.	
St. George's East.—23, Phillip-st., and 1, Prince of Orange-court, f.	600
Stepney.—4, Heath-st., f.	425
18, Gold-st., f.	365
Homerton.—20, 22, and 24, Templar-rd., f.	1,010
58 and 60, Templar-rd., f.	600
12 and 14, Templar-rd., u.t. 45 yrs., g.r. 7*l.* 10s.	420
Limehouse.—30, West India Dock-rd., f.	450
Poplar.—6, Market-st., u.t. 27 yrs., g.r. 2*l.* 15s.	110
By NEWBON, EDWARDS, & SHEPHARD.	
Dalston.—84 and 86, Holly-st., u.t. 7½ yrs., g.r. 2*l.*	420
Haverstock Hill.—29, Parkhill-rd., u.t. 49 yrs., g.r. 12*l.*, r. 80*l.*	655
Finsbury Park.—50, Endymion-rd., u.t. 76 yrs., g.r. 9*l.* 9s., e.r. 52*l.*	500
Fonthill-rd., a plot of freehold building land	265
By STIMSON & SONS.	
South Lambeth.—268, South Lambeth-rd., area 16,250 ft., f., r. 200*l.*	2,500
Streatham.—33 to 39 (odd), Wellfield-rd., f.	350
Dulwich.—3, Oakhurst Grove, u.t. 74¾ yrs., g.r. 10*l.*, r. 40*l.*	365
Clapham.—248, Clapham-rd., u.t. 34 yrs., g.r. 11*l.*, r. 65*l.*	400
Newington.—24 and 26, Penton-pl., u.t. 41½ yrs., g.r. 9*l.*, r. 72*l.*	720
Shepherd's Bush.—16, Stowe-rd., u.t. 61½ yrs., g.r. 10*l.*, r. 30*l.*	340
Wandsworth.—2, West Side, u.t. 84 yrs., g.r. 10*l.*, e.r. 50*l.*	500
Holloway.—5, Enkel-st., u.t. 59 yrs., g.r. 6*l.*, r. 32*l.*	305
Edgware-rd.—63, Salisbury-st., u.t. 19½ yrs., g.r. 4*l.* 13s. 4d.	190
November 8.—By BLAKE & DANNATT.	
Peckham.—8 and 10, Hanover-st., u.t. 22 yrs., g.r. 15*l.*, r. 69*l.*	535
63, East Surrey-gr., u.t. 60 yrs., g.r. 12*l.*	255
Camberwell.—33 and 34, Wilson-rd., u.t. 62½ yrs., g.r. 14*l.*, r. 84*l.*	820
5, Grace's-rd., u.t. 57½ yrs., g.r. 5*l.* 10s., r. 34*l.*	305
2, Oswyth-rd., u.t. 75 yrs., g.r. 5*l.* 5s.	310
37, Elmington-rd., u.t. 71 yrs., g.r. 5*l.* 5s.	290

Tottenham.—4 and 5, Colina-rd., u.t. 79 yrs., g.r. 12*l.* £410
Mitcham, Surrey.—23 to 37 (odd), Fountain-rd., u.t. 78½ yrs., g.r. 22*l.* 535
By EDWARD MILLARD.
Fleet-st.—10, Wine Office-court., area 840 ft., f... 1,200
By MULLETT, BOOKER, & CO.
Bayswater.—16, Pembridge-sq., with stabling, f.. 4,500
By H. E. TRAFFORD & CARTER.
Cubitt Town.—2, Pier-st., u.t. 49½ yrs., g.r. 10s., e.r. 35*l.* 230

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 12 0	per 1,000 alongside, in river
Rough Stocks and Grizzles	1 10 0	" "
Facing Stocks	2 12 0	" "
Shippers	2 8 0	" "
Flettons	1 8 0	" at railway depôt.
Red Wire Cuts	1 13 0	" "
Best Fareham Red	3 11 0	" "
Best Red pressed Ruabon Facing.	5 5 0	" "
Best Blue Pressed Staffordshire	4 6 6	" "
Do., Bullnose	4 10 0	" "
Best Stourbridge Fire Bricks	4 4 0	" "
GLAZED BRICKS		
Best White and Ivory Glazed Stretchers	13 0 0	" "
Headers	12 0 0	" "
Quoins, Bullnose, and Flats	17 0 0	" "
Double Stretchers	19 0 0	" "
Double Headers	16 0 0	" "
One Side and two Ends	19 0 0	" "
Two Sides and one End	20 0 0	" "
Splays, Chamfered, Squints	20 0 0	" "
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	" "
Quoins, Bullnose, and Flats	14 0 0	" "
Double Stretchers	15 0 0	" "
Double Headers	14 0 0	" "
One Side and two Ends	15 0 0	" "
Two Sides and one End	15 0 0	" "
Splays, Chamfered, Squints	14 0 0	" "
Seconds Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand	7 3	per yard, delivered
Thames Ballast	6 0	" "
Best Portland Cement	32 0	per ton, delivered.
Best Ground Blue Lias Lime	25 6	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	12s 6d.	per yard, delivered
Stourbridge Fire-clay in sacks,	28s. od.	per ton at rly. dpt

STONE.

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Bath "	1 7	" "
Farleigh Down Bath	1 8	" "
Beer in blocks	1 6½	" "
Grinshill "	1 10	" "
Brown Portland in blocks	2 2	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 5	" "
Red Mansfield "	2 4	" "
Hard York in blocks	2 10	" "
Hard York 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	2 8	per ft. super. at rly. depôt
" " 6 in. Rubbed Ditto	3 0	" "
" " 3 in. sawn both sides slabs (random sizes)	1 3	" "
" " 3 in. self-faced Ditto	0 9½	" "
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube. deld. rly. depôt
" " " 6-in sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3-in. do.	1 2½	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	11 5 0	per 1000 of 1200 at rly. dep
" best seconds "	10 15 0	" "
16× 8 best "	6 2 6	" "
20×10 best blue Portmadoc	10 18 0	" "
16× 8 best blue Portmadoc	6 0 0	" "
20×10 best Eureka unfading green	11 2 6	" "
16× 8 " "	6 15 0	" "
20×10 Permanent green	10 0 0	" "
16× 8 " "	5 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	41 6	per 1,000 at rly. depôt
Hip and valley tiles	3 7	per doz. " "
Best Broseley tiles	48 6	per 1,000 " "
Hip and valley tiles	4 0	per doz. " "

PRICES CURRENT (*Continued*).

TILES.

	s. d.	
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000 at rly. depot.
Do. ornamental Do.	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 9	" " "
Best Red or Mottled Staffordshire Do. (Peakes)	50 9	per 1,000 " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.	
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	15 10 0	
Deals: best 3 by 9	13 0 0	14 10 0	
Battens: best 2½ in. by 7 in. and 8 in. and 3 in. by 7 in. and 8 in.	10 0 0	11 0 0	
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.	
Deals: seconds	1 0 0	less than best	
Battens: seconds	0 10 0	" " "	
2 in. by 4 in. and 2 in. by 6 in.	8 10 0	9 10 0	
2 in. by 4½ in. and 2 in. by 5 in.	8 0 0	9 0 0	
Foreign Sawn Boards— 1 in. by 1½ in. by 1½ in.	0 10 0	more than battens.	
¾ in.	1 0 0	"	
Fir timber: Best middling Danzig or Memel (average specification)	At per load of 50 ft 4 10 0	5 0 0	
Seconds	4 5 0	4 10 0	
Small timber (8 in. to 10 in.)	3 12 6	3 15 0	
Swedish balks	2 15 0	3 0 0	
Pitch pine timber (30 ft.)	3 0 0	3 10 0	
JOINERS' WOOD.	At per standard.		
White Sea: First yellow deals, 3 in. by 11 in.	22 0 0	23 0 0	
3 in. by 9 in.	20 0 0	21 0 0	
Battens, 2½ in. and 3 in. by 7 in.	15 0 0	16 0 0	
Second yellow deals, 3 in. by 11 in.	17 0 0	18 0 0	
" " 3 in. by 9 in.	15 10 0	16 10 0	
Battens, 2½ in. and 3 in. by 7 in.	12 0 0	13 0 0	
Third yellow deals, 3 in. by 11 in. and 9 in.	12 10 0	13 10 0	
Battens, 2½ in. and 3 in. by 7 in.	10 10 0	11 10 0	
Petersburg: first yellow deals, 3 in. by 11 in.	19 0 0	20 0 0	
Do. 3 in. by 9 in.	16 0 0	17 0 0	
Battens	12 10 0	13 0 0	
Second yellow deals, 3 in. by 11 in.	14 0 0	15 0 0	
Do. 3 in. by 9 in.	13 0 0	14 0 0	
Battens	11 0 0	12 0 0	
Third yellow deals, 3 in. by 11 in.	11 10 0	12 10 0	
Do. 3 in. by 9 in.	11 0 0	12 0 0	
Battens	10 0 0	11 0 0	
White Sea and Petersburg:— First white deals, 3 in. by 11 in.	13 10 0	14 10 0	
" " " 3 in. by 9 in.	12 10 0	13 0 0	
Battens	10 10 0	11 10 0	
Second white deals 3 in. by 11 in.	12 10 0	13 10 0	
" " " 3 in. by 9 in.	12 0 0	12 10 0	
" " battens	9 10 0	10 10 0	
Pitch pine: deals	16 0 0	18 0 0	
Under 2 in. thick extra	0 10 0	1 0 0	
Yellow Pine—First, regular sizes	32 0 0	33 10 0	
Broads (12 in. and up)	2 0 0	more.	
Oddments	22 0 0	24 0 0	
Seconds, regular sizes	24 10 0	26 10 0	
Yellow Pine Oddments	20 0 0	22 0 0	
Kauri Pine—Planks, per ft. cube	0 3 6	0 4 6	
Danzig and Stettin Oak Logs— Large, per ft. cube	0 2 6	0 3 0	
Small " "	0 2 3	0 2 6	
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6	
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 7	
¾ in. do. do.	0 0 7	- - -	
Dry Mahogany— Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11	
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0	
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0	
Teak, per load	16 0 0	20 0 0	
American Whitewood Planks— Per ft. cube	0 3 0	0 3 6	
Prepared Flooring—	Per square		
1 in. by 7 in. yellow, planed and shot	0 13 0	0 16 6	
1 in. by 7 in. yellow, planed and matched	0 13 6	0 17 6	
1¼ in. by 7 in. yellow, planed and matched	0 15 0	1 0 0	
6 in. at 6d. per square less than 7 in.			
1 in. by 7 in. white, planed and shot	0 11 0	0 12 6	
1 in. by 7 in. white, planed and matched	0 11 6	0 13 6	
1¼ in. by 7 in. white, planed and matched	0 13 6	0 15 6	
6 in. at 6d. per square less than 7 in.			

JOISTS, GIRDERS, &c.

	In London, or delivered to Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	7 5 0
Compound Girders " "	8 0 0	9 0 0
Angles, Tees and Channels, ordinary sections	8 2 6	9 2 6
Flitch Plates	8 10 0	9 0 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 0 0	8 0 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON.— Common Bars	8 0 0	8 10 0
Staffordshire Crown Bars, good merchant quality	8 10 0	9 0 0
Staffordshire "Marked Bars"	10 10 0	- - -
Mild Steel Bars	9 0 0	9 10 0
Hoop Iron, basis price	9 5 0	9 15 0
" " galvanised	16 0 0	- - -

(* And upwards, according to size and gauge.)

PRICES CURRENT (*Continued*)

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON— Sheet Iron, Black.— Ordinary sizes to 20 g.	10 0 0	- - -
" " to 24 g.	11 0 0	- - -
" " to 26 g.	12 10 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality.— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0	- -
" " 22 g. and 24 g.	13 0 0	- - -
" " 26 g.	14 0 0	- - -
Sheet Iron, galvanised, flat, best quality.— Ordinary sizes to 20 g.	16 10 0	- - -
" " 22 g. and 24 g.	17 0 0	- - -
" " 26 g.	18 10 0	- - -
Galvanised Corrugated Sheets.— Ordinary sizes, 6 ft. to 8 ft. 20 g.	12 10 0	- - -
" " 22 g. and 24 g.	13 0 0	- - -
" " 26 g.	14 0 0	- - -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12 5 0	- - -
" " 22 g. and 24 g.	13 5 0	- - -
" " 26 g.	14 5 0	- - -
Cut nails, 3 in. to 6 in. (Under 3 in. usual trade extras.)	9 10 0	10 0 0

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d
LEAD—Sheet, English, 3 lbs. & up.	14 0 0	- - -
Pipe in coils	14 10 0	- - -
Soil Pipe	17 0 0	- - -
ZINC—Sheet— Vieille Montagne ton	24 10 0	- - -
Silesian	24 0 0	- - -
COPPER— Strong Sheet per lb.	0 1 0½	- - -
Thin "	0 1 2	- - -
Copper nails "	0 1 2	- - -
BRASS— Strong Sheet "	0 0 11	- - -
Thin "	0 1 1	- - -
TIN—English Ingots "	0 1 3½	- - -
SOLDER—Plumbers' "	0 0 6½	- - -
Tinmen's "	0 0 8	- - -
Blowpipe "	0 0 9	- - -

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	3d. per ft. delivered.
" " fourths	2¾d. " "
21 oz. thirds	3¾d. " "
" " fourths	3½d. " "
26 oz. thirds	5d. " "
" " fourths	4½d. " "
32 oz. thirds	6d. " "
" " fourths	5½d. " "
Fluted sheet, 15 oz.	3½d. " "
" " 21 "	4d. " "
½ Hartley's Rolled Plate	2½d. " "
⅜ " " "	3½d. " "
¼ " " "	3¾d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 9
" " in barrels	"	0 2 10
" " in drums	"	0 3 0
Boiled " " in pipes	"	0 2 11
" " in barrels	"	0 3 0
" " in drums	"	0 3 2
Turpentine, in barrels	"	0 2 3
" in drums	"	0 2 5
Genuine Ground English White Lead	per ton	22 0 0
Red Lead, Dry	"	22 10 0
Best Linseed Oil Putty	per cwt.	0 9 0
Stockholm Tar	per barrel	1 10 0

VARNISHES, &c.

	per gallon. £ s. d.
Fine Elastic Copal Varnish for outside work	0 16 6
Best Elastic Copal Varnish for outside work	1 0 0
Best Elastic Carriage Varnish for outside work	0 16 0
Best Hard Oak Varnish for inside work	0 10 6
Best Extra Hard Church Oak Varnish for inside work	0 10 6
Fine Hard Copal Varnish for inside work	0 16 0
Best Hard Copal Varnish for inside work	1 0 0
Best Hard Carriage Varnish for inside work	0 16 0
Extra Pale Paper Varnish	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
Best French and Brush Polish	0 10 0

TO CORRESPONDENTS.

S. S. (Amounts should have been stated). J. K.—W. D. (Below our limit).

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(For some Contracts, &c., still open, but not included in this List, see previous issues.)

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Waterworks	Kettering U.D.C.	H. Norwood, Surveyor, Kettering	Nov. 19
Shed, &c., Halliwell, Bolton	L. & Y. Railway Company	Engineer, Hunt's Bank, Manchester	do.
Four Houses, Great Horton, Bradford		H. E. Priestley, Architect, 17, Bertram-road, Manningham	do.
Water Tower, &c., Marton-street	Lancaster Corporation	Borough Surveyor, Town Hall, Lancaster	do.
*Asphalting and Paving Works	Hammersmith Council	Borough Surveyor, Town Hall, Hammersmith	Nov. 20
Two Houses, Llandrindod Wells		P. Morris, Architect, Llandrindod Wells	do.
Street Works, Tudor-road, &c., Moseley	King's Norton U.D.C.	Surveyor, 23, Valentine-road, King's Heath	do.
Street Works, Smith-street, &c.	Nelson (Lancs) Corporation	B. Ball, Civil Engineer, Town Hall, Nelson	do.
Street Works, Lonsdale-street, &c.	do.	do.	do.
Road Works, Eaton-road	Ilkley U.D.C.	Surveyor, Council Offices, Ilkley	do.
Sewerage Works, &c.	Newport Pagnell U.D.C.	D. Balfour & Son, Civil Engineers, 1, Victoria-street, S.W.	do.
Pavilion	Fleetwood U.D.C.	A. Frobisher, Civil Engineer, Town Hall, Fleetwood	do.
Bacteria Beds, &c., at Sewage Works, Brook-street	Brentwood U.D.C.	H. Jones, Parliament Mansions, Victoria-street, S.W.	do.
Street Works, Frances-street, &c.	Macclesfield Town Council	E. E. Adshead, Borough Engineer, Town Hall, Macclesfield	do.
Three Cottages, Canterbury	Mr. E. Layton	A. H. Steele, Architect, Dover	do.
School, Crookston	Inveresk School Board	Mr. Constable, Architect, 3, Hill-street, Edinburgh	do.
Culvert over River Avon	Rugby U.D.C.	D. G. Macdonald, Civil Engineer, Council Offices, Rugby	do.
Hotel, &c., Highroad Well, Halifax		L. Coates, Architect, Waterhouse-street, Halifax	do.
Electricity Station, Heaton Norris	Manchester Corporation	City Surveyor, Town Hall, Manchester	do.
Electricity Station, Hyde-road, Denton	do.	do.	do.
Store Premises, Lofthouse, near Wakefield	Leeds Indus. Co-op. Soc., Ltd.	J. W. Fawcett, 10, Albion-street, Leeds	do
Wood Paving	King's Lynn Corporation	Borough Engineer, Town Hall, King's Lynn	do.
Street Works, Oxford-road	Macclesfield Town Council	E. E. Adshead, Borough Engineer, Town Hall, Macclesfield	do.
Sewers, Ryhill	Hemsworth (Yorks) R.D.C.	T. H. Richardson, Surveyor, Hemsworth	do.
Road Works, York and Ross-roads	Reading Town Council	J. Bowen, Borough Engineer, Town Hall, Reading	Nov. 21
Offices	Wallasey U.D.C.	J. H. Crowther, Engineer, Great Float, Birkenhead	do.
Tramcar Shed	Lancaster Corporation	Borough Surveyor, Town Hall, Lancaster	do.
Rebuilding Ryburndale Paper Mills, Rishworth		R. Horsfall & Son, Architects, Commercial-street, Halifax	do.
Engineering Works, Milford	Stafford Corporation	W. Blackshaw, Borough Engineer, Stafford	do.
Granite Road Metal	Newmarket U.D.C.	S. J. Ennion, Deva Chambers, Newmarket	Nov. 22
Additions to Hospital, Warley, near Halifax		M. Hall, Architect, 29, Northgate, Halifax	do.
House, &c., Newbridge, near Ruabon	Harrow-on-the-Hill U.D.C.	W. H. Johns, Architect, Llangollen	do.
Sewerage Works, &c.	Mr. Nansen	J. P. Bennetts, Surveyor, Harrow-on-the-Hill	Nov. 23
Two Houses, Dale-street, Askam-in-Furness	Shettleston (N.B.) Committee	Mr. Cowley, 10, Marsh-street, Askam	do.
Additions to Hospital, Lightburn		A. Cullen, Architect, Hamilton	do.
Road Works, &c., Cwmaman, Wales	New Swindon Gas Co.	Smith & Davies, Architects, Aberdare	do.
Alterations, &c., to Chapel, Great Bentley, Essex	Middlesbrough Corporation	C. E. Butcher, Architect, 3, Queen-street, Colchester	do
*Brick Gasholder Tank		The Secretary, Gas Offices, Swindon	do
Street Works, Station-street	Northwich U.D.C.	Borough Engineer, Municipal Buildings, Middlesbrough	Nov. 24
Additions to Asylum, Littlemore, near Oxford	Kettering U.D.C.	County Surveyor, Oxford	Nov. 25
House, Winnington	Surbiton U.D.C.	H. Bancroft & Sons, Civil Engineers, 88, Mosley-st., Manchester	do.
Sewers, &c.	Brentford Guardians	T. R. Smith, Surveyor, Kettering	do.
Road Works, Grange Park-avenue	Swansea Guardians	Surveyor, Council Offices, Ewell-road, Surbiton	do
Granite Spalls, &c., Isleworth	Portskewett (Wales) School Board	W. Stephens, Union Offices, Isleworth	Nov. 26
Infirmary	Glasgow Corporation	L. Jenkins, Union Offices, Swansea	do.
Additions to Schools, Sudbrook	West Ham Council	Habershon & Co., Architects, Queen's Chambers, Newport	do.
Warehouses, Nelson and Bell streets	Willesden District Council	Thomson & Sandilands, Architects, 241, West George-st., Glasgow	do.
*Tenement Houses, Canning Town	Fulham Council	Borough Engineer, Town Hall, West Ham, E.	do
*Road-making and Paving Works	Barnet U.D.C.	Engineer to Council, Public Offices, Dyne-road, Kilburn, N.W.	do
*Making-up and Paving Street	Lambeth Guardians	Borough Surveyor, Town Hall, Fulham	Nov. 27
*Making-up Roads	Admiralty	Surveyor, 40, High-street, Barnet	do.
*Tiling Kitchen, Prince's-road Workhouse	The Vendors	Clerk, Guardians' Offices, Brook-street, Kennington	do.
*New Coastguard Buildings, Northumberland	Holmfirth (Yorks) U.D.C.	District Clerk of Works, 21, Bootham-terrace, York	Nov. 29
*Pulling Down and Clearing Site, Hornsey	Clitheroe Corporation	John Farrer, Architect, 2, Coleman-street, E.C.	Nov. 30
Sewerage Works	Aylsham Guardians	J. Barraclough, Engineer, Holmfirth	do.
Settling Tanks, Henthorne	Norton-under-Cannock (U.D.) S. B.	A. E. Bleavard, Church-street, Clitheroe	do.
Additions to Workhouse	Trinity House Corporation	J. B. Pearce, Architect, 15, Upper King-street, Norwich	Dec. 2
*Additions, &c., to Schools	Great Western Railway Company	T. H. Fleeming, Architect, 102, Darlington-st., Wolverhampton	do.
*Lighthouse, Fog Signal House, &c., Dungeness	Leyton U.D.C.	Trinity House, E.C.	do
*New Station Buildings, &c., Filton, Glos	Shoreditch Borough Council	Engineer's Office, Bristol Station	do.
*Extension of Electric Lighting Works	Dartford U.D.C.	W. Dawson, Town Hall, Leyton	Dec. 3
Well Boring, Public Baths, Pitfield-street, N.	Commissioners of H.M. Works, &c.	H. M. Robinson, Town Hall, Old-street	do.
Refuse Destructor	Wilts United Dairies, Ltd.	W. Harston, Surveyor, High-street, Dartford	do.
*Alterations, Ordnance Survey Offices, Southampton	Warwick Union	Survey Office, Southampton	Dec. 4
*Offices, Stabling and Tenements, Kensal-road	School Board for London	Pilditch, Chadwick, & Co., 2, Pall Mall East, S.W.	Dec. 5
*Erection of New Infirmary, &c.	Wolverhampton Council	F. P. Trepess, Architect, 8, Jury-street, Warwick	do.
*Supply of Light Radiators	A. J. Dorman, Esq.	Contracts Sub-Department, School Board Offices, W.C.	Dec. 9
*Enlargement of Town Hall	Mr. S. Hull	F. T. Beck, Architect, Wulfrun Chambers, Wolverhampton	do.
*Museum Building, Middlesbrough	The Managers	J. M. Bottomley, Architect, Middlesbrough and Leeds	No date
Cottage, Courtlands Cross, Lympstone, Devon		E. E. Ellis, Architect, Exmouth	do.
Stable and Loft, Lympstone		do.	do.
Improvement Works at School, Macclesfield		Jabez Wright, Architect, Macclesfield	do.
Six Houses, Lofthouse, near Wakefield		W. Wrigley, Architect, 6, Westgate, Wakefield	do.
Drainage Works, &c., Churwell, near Leeds		A. Barber, 4, King-street, Wakefield	do.
Two Villas, Ninian-road, Roath Park		C. L. Watkins, Architect, Caerphilly	do.
Calvinistic Methodist Church, Cardiff		Habershon, Fawckner, & Co., Architects, 14, Pearl-street, Cardiff	do.
Alterations to the "Brown Cow" Inn, Cardiff		Openshaw & Gill, Architects, Bury	do.
Eight Houses, Lytton-road, Girlington, Yorks		R. Drake, Architect, 31, Pearson-lane, Girlington	do.
Two Houses, Birstwith, Harrogate	Captain Greenwood	Bland & Bown, Architects, Harrogate	do.
Additions to Broadwood Cottage, Ingleton		J. Kassall, Architect, Kirkby Lonsdale	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Road Surveyor	Hackney Borough Council	156*l.*	Nov. 19
*Correspondence and General Clerk	do.	120*l.*	do.
*Junior Draughtsman and Clerk	do.	80*l.*	do.
*Assistant Lecturer in Civil Engineering	Hartley College, Southampton	120*l.*	Nov. 20
*Superintendent of Cleansing	Met. Borough of Marylebone	180*l.*	Nov. 25
*Clerk of the Works	Ilford U.D.C.	4*l.* 4*s.* per week	Nov. 26
*Surveyor	Sedgeley U.D.C.	150*l.*	Nov. 27
*Assistant Examiner in H.M. Office of Works, &c.	H.M. Naval Establishments	Not stated	Nov. 28
*Assistant Civil Engineers (2nd Grade)	Edmonton U.D.C.	Not stated	Dec. 12
*Clerk of Works		Four to Five Guineas per week	No date

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii. x. & xxii *Public Appointments, pp.* xix. & xxii.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of tenders accepted unless the amount of the tender is given, nor any list in which the lowest tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BARLBY (Yorks).—For the construction of sewers and sewage disposal works, for the Riccall Rural District Council. Mr. E. J. Silcock, C.E., 10, Park-row, Leeds :—

J. Brunton	£4,760 15 4	T. C. Starkey	£3,630 3 6
Woodall & Woodall	4,187 10 0	Egan & Sons	3,615 4 10
Schofield, Sons, & Co., Ltd.	3,790 0 0	Arnold & Son, Doncaster *	3,170 0 0
		B. Roberts	2,868 10 11

BECKENHAM.—For making-up Queen Anne-avenue, &c., for the Urban District Council. Mr. J. A. Angell, Surveyor, District Council Offices, Beckenham :—

G. Wilson	£4,491 0 0	Mowlem & Co., Grosvenor Wharf, Westminster*	£3,677 4 2
C. Pearce	4,113 12 3		
Fry Bros.	4,041 13 0		

BERKHAMPSTEAD.—For making up, &c., Doctor's Common-road, for the Urban District Council of Great Berkhampstead. Mr. E. H. Adey, surveyor, Montague-road, Berkhampstead :—

Tree & Son	£1,325 0 0	H. Williams	£1,261 13 4
Barry Building and Contracting Society, Ltd.	1,299 2 0	H. Brown	1,225 0 0
		Felkin & Watson, the Green, Southall*	1,186 18 0

[Surveyor's estimate, £1,300.]

CARDIFF.—For additions to warehouses in Millicent-street, for Messrs. John Isaac & Sons. Mr. Edgar G. C. Down, architect, 31, High-street, Cardiff :—

Thomas & Co.	£570 0	Shepton & Son	£416 10
G. Griffiths	455 0	David Davies	405 0
Lattey & Co., Ltd.	439 0	W. T. Morgan*	398 0
Knox & Wells	435 0	F. Small	390 0

CROYDON.—For the execution of street works, Onslow-gardens, &c., Wallington, for the Rural District Council. Mr. R. M. Chart, Surveyor, Town Hall, Croydon :—

Onslow-gardens.

T. Adams	£3,193	W. Langridge	£2,488
Practical Landscape Gardening Co.	2,985	E. Iles, Mitcham and Wimbledon*	2,471
W. H. Wheeler	2,567	Lawrence & Thacker	2,460
Free & Sons	2,510		

Springfield-road.

T. Adams	£498	W. Langridge	£371
Practical Landscape Co.	450	W. H. Wheeler	352
Free & Sons	400	E. Iles*	318
C. J. Burnand	385	Lawrence & Thacker	303

DEVONPORT.—For alterations to and rebuilding part of the King's Arms, George-street, for Mr. J. Martyn. Mr. Edgar M. Leest, architect, 14, St. Aubyn-street, Devonport :—

	Cement Front. £ s. d.	Glazed Terra Cotta Front. £ s. d.
Jenkin & Son	1,433 0 0	1,787 10 0
A. M. Coles	1,327 0 0	1,671 0 0
J. Quick	1,305 0 0	1,651 0 0
J. Coles	1,313 0 0	1,627 0 0
W. G. Goad	1,284 10 0	1,615 15 0
T. May, Plymouth*	1,288 0 0	1,615 0 0
J. Fiell	1,277 13 1	1,593 18 0
F. Gillard	1,224 18 8	1,567 4 9

FROXFIELD (Hants).—For the erection and completion of a gamekeeper's house, for Mr. J. Silvester. Mr. E. Arden Minty, architect, 39, Victoria-street, Westminster :—

Pocock Bros.	£644 0	J. Hayes, Hawkley*	£384 0
W. Brading	420 17		

HILL BROW (Hants).—For small addition and redecoration, painting, &c., at Lingwood, for Mr. H. Granville Sharp. Mr. E. A. Minty, architect, Westminster :—

E. Finch	£227 0 0	W. Brading, West Liss	£118 5 3
J. Holder	119 0 0		

HOUNSLOW.—For making-up, kerbing, &c., two new roads, Harlington, for Mr. Robert Newman. Mr. G. W. Manning, surveyor, London-road, Ashford, Staines :—

J. Macklin	£1,200 0	W. H. Wheeler	£717 0
Killingback & Co.	1,050 0	Felken & Watson	697 3
A. Green	927 0	Mott & Sons	625 12
S. Kavanagh	883 0	G. Hebburn, Hersham, Surrey*	567 0
R. W. Swaker	754 0		

HOVE.—For new street works for the Town Council. Mr. H. H. Scott, Borough Surveyor :—

Caburn-road.

Parsons & Sons, 118, Church-road, Hove* .. £293

New Street Works in Rutland Gardens.

W. A. McKellar, 1, Langdale-road, Hove* £1,741

ILKLEY.—For the supply of granite, road metal, &c. (1,000 tons), for the Urban District Council. Mr. Thomas H. Smith, surveyor :—

		per ton. s. d.
Leonard Cooper, Central Bank Chambers, Leeds*	Granite macadam	8 10
	Granite sand	7 0

[And ten other tenders.]

LEICESTER.—For the construction of 850 lineal yards of 6-in. Hassall's single-lined stoneware pipe sewer, together with flushing-chamber, manholes, lampholes, and other works in connexion therewith, for the Parks and Recreation Grounds Committee. Mr. E. Geo. Mawbey, Borough Engineer and Surveyor, Town Hall, Leicester:—

Jewell	£483 7 2	T. Philbrick	£323 8 2
Stimpson & Rollestone	437 12 0	H. Mason	320 15 7
J. Holme	391 3 0	J. H. Smedley, Battenberg-rd., Leicester*	299 2 8
Johnson & Langley	338 12 4		

LONDON.—For the erection of a receiving house and cottages for children on the Newlands, Peckham Rye, S.E., for the Guardians of St. Giles', Camberwell. Mr. A. E. Mullins, architect, 16, Church-street, Camberwell Green, S.E. :—

Foster Bros.	£14,882 0 0	Tomkins	£12,836 11 7
Holliday & Greenwood	13,735 0 0	Gibb & Co.	12,709 0 0
G. Parker	13,480 0 0	Courteney & Fairbain	12,599 0 0
W. Reason	13,463 0 0	C. Ansell	12,500 0 0
Burman & Sons	13,200 0 0	Holloway	12,442 0 0
Parnell & Co.	13,059 0 0	Vogel Goad	12,385 0 0
Sharpington	12,998 0 0	Balaam Bros.	12,112 0 0

LONDON.—For alterations and additions to laundry premises in rear of 16 and 18, Queen's-road, Peckham, for Mr. C. D. Cocks. Mr. A. E. Mullins, architect, 16, Church-street, Camberwell Green, S.E.:—

Burman & Sons	£1,205	G. Parker	£1,025
Balaam Bros.	£1,190		

LUTON.—For the execution of paving works, &c., Moor-street, and others, for the Town Council. Mr. A. J. L. Evans, C.E., Borough Surveyor, Town Hall, Luton :—

Moor-street.

Free & Sons	£471 6 0	G. Powdrill	£419 0 0
Patent Victoria Stone Co.	464 0 0	G. W. Pryer, Luton*	385 0 0

Crawley-road.

Free & Sons	£171 14 0	G. Powdrill	£162 0 0
Patent Victoria Stone Co.	166 0 0	G. W. Pryer*	138 0 0

Reache-street.

G. Powdrill	£634 10 0	Patent Victoria Stone Co.*	£618 11 8
Free & Sons	623 4 8		

Tennyson-road.

Free & Sons	£214 0 0	G. Powdrill *	£188 0 0

Harcourt-street.

G. Powdrill	£610 6 0	Patent Victoria Stone Co.*	£578 17 6
Free & Sons	586 18 6		

MANCHESTER.—For the erection of two houses, Ashton Old-road, Fairfield, for Mrs. M. Holt. Messrs. C. K. & T. C. Mayor, architects, 41, John Dalton-street, Manchester :—

E. & C. Jackson, Old-lane, Higher Openshaw*.. £1,450

NEWRY (Ireland).—For rebuilding the workhouse for the Guardians. Mr. John Brown, architect, Newry. Quantities by architect as to approximate cost in building :—

T. McDonald	£6,800	McAllenam	£4,778
D. Mahood	5,350	A. Wheelan, Newry*	4,749
J. McKee	4,981		

NORTHFLEET (Kent).—For the execution of wood paving works for the Urban District Council. Mr. S. Honeycombe, Council Offices, The Hill, Northfleet :—

Griffiths, Winchester House, Bishopsgate, 15s. per yard.

SHEERNESS.—For the following, for the Sheerness Urban District Council: (1) quartzite, 200 yds.; (2) good clean pit flints, 300 yds., both broken to pass through a 2-in. ring; (3) good clean hoggin (for binding purposes), 200 yds.; (4) indurated stone slabs, 2 in. thick, about 600 yds. super. Mr. T. F. Berry, Surveyor :—

Road Maintenance and Stone Supply Co., Ltd., Gravesend*	quartzite, per yd.	s. d. 12 6
Wills & Packham, Ltd., Sittingbourne*	flints	3 10
" "	hoggin	2 3
Patent Victoria Stone Co., Ltd., London*	paving slabs	4 1
W. Griffiths & Co., Ltd., London	quartzite	15 6
Exors. of W. Wood, Milton, Kent	flints	3 10
" "	hoggin	3 6
Smeed, Dean, & Co., Ltd., Sittingbourne	flints	3 10
" "	hoggin	3 0
H. Cremer, Oare, Faversham	flints	3 10
" "	hoggin	2 8
R. Cornford, Milton	flints	4 2
" "	hoggin	3 2
W. S. Harnett, Newington, Sittingbourne	flints	4 3
Burgess, Burgess & Co., London	paving slabs	4 5
W. Clark, Ospringe, Faversham	flints	4 7
" "	hoggin	4 0
L. Sommerfeld, London	quartzite	12 9
Fry Bros., Greenwich	flints	4 0
" "	hoggin	2 9
Quartzite Co., Ltd., London	quartzite	12 8
J. Runnals, Penzance	paving slabs	4 6
Burley & Son, Sittingbourne	flints	3 10

SHEERNESS.—For erection of toll houses at Sheerness Pier. Mr. T. F. Berry, Surveyor :—

J. Brown	£396	J. R. Bligh, Eastchurch, Sheerness*	£347
J. Lodder	379		
C. F. Hughes	378		

[Surveyor's estimate, £378]

THORPE-LE-SOKEN (Essex). — For additions to Rolph Schools, for the Committee. Mr. C. E. Butcher, architect, 3, Queen-street, Colchester :—

F. C. Thurman	£1,099 10	T. J. Ward	£871 0
Gooch & Co.	985 5	A. Diss	850 0
T. C. Canham	968 0	Dupont & Co.	838 0
Pennick & Taylor	935 0	H. Potter	835 0
C. Mills	930 0	Jas. McKay, Clacton-on-Sea‡	807 0
C. West	894 0		

‡ Subject to variations.

UPTON PARK.—For the erection of two blocks of buildings on a site at Carter-road, Plaistow, E., comprising pupil teachers', laundry, and cookery centres, and caretaker's house, for the West Ham School Board. Mr. William Jacques, Architect to the Board, 2, Fen-court, E.C. Quantities by Messrs. R. L. Curtis & Sons :—

A. E. Symes	£26,111	G. Sharpe	£22,055
B. E. Nightingale	24,901	W. J. Maddison	21,615
Stimpson & Co.	22,537	A. Reed	21,220
Battley, Sons, & Holness	22,319	Gregar & Son, Stratford†	21,159

WELLINGBOROUGH.—For supplying and laying concrete flags, &c., Midland-road, for the Urban District Council. Mr. E. Sharman, surveyor, Market-square, Wellingborough :—

	Per yard laid. s. d.
W. Stevens (Keswick)	5 0
" (Ellis)	4 10
Victoria Stone Co.	4 10
Croft Granite Co.	4 9
Ellis & Sons, Leicester*	4 6
Empire Indurated	4 6
G. F. Thompson	4 6
Abell & Cammell	4 3

WEST HAM.—For the erection of forty double tenement houses, Eve-road, Plaistow, for the Town Council. Mr. J. G. Morley, Borough Engineer :—

F. & E. Davey	£23,885 0 0	Herbert Bros.	£18,129 0 0
General Builders, Ltd.	21,797 0 0	Haines & Co.	17,635 19 2
F. G. Minter	21,591 0 0	Gregar & Son	17,580 0 0
Martin Wells & Co.	20,850 0 0	G. Wise	16,899 0 0
Thomas & Edge	20,314 0 0	Barker & Co., Ltd.	16,320 0 0
J. W. Jerram	18,678 0 0	H. J. Carter, Grays*	15,740 0 0

WREXHAM.—For the erection of school buildings, Brynteg, for the Broughton School Board. Messrs. Lockwood & Sons, architects, 80, Foregate-street, Chester :—

	For New Schools.	For Alterations.
T. Williams	£3,899 19 0	£1,509 7
W. E. Samuel	3,600 0 0	1,380 0
R. Williams	3,498 14 6	1,281 12
Davies Bros.	3,385 0 0	1,317 0
W. H. Wycherley, Broughton, near Wrexham*	3,169 0 0	1,199 0

YORK.—For the execution of street works, Back Markham-crescent, &c., for the Corporation. Mr. Alfred Creer, City Engineer, Guildhall, York :—

C. Martin, Longfield-terrace, York*.. £730 17 8

LONDON SCHOOL BOARD TENDERS.

At the last meeting of the London School Board, the Works Committee submitted the following lists of tenders. Mr. T. J. Bailey is the Board's architect :—

* *Recommended for acceptance.*

ALEXIS-STREET.—Improvements — Providing new halls for each department, 38 ft. by 25 ft. New drawing classroom, area 1,120 ft. super. New cloakrooms, lavatories, and stock and teachers' rooms for each department. Providing one new internal water-closet for teachers. New staircases for boys and girls. New heating-chamber and coal-store in basement. New coal-lift from basement to second floor. New kindergarten gallery in babies' room, and redividing and restepping centre classrooms in each department. Enclosing, draining, and tarpaving the additional land. Heating by open fires and low-pressure hot-water apparatus. Revised accommodation;— boys, 378; girls, 376; infants, 424; total, 1,178: net loss of 109 places :—

McCormick & Sons	£13,786 0	Marsland & Sons	£13,035 0
F. & H. F. Higgs	13,649 0	Chessum & Sons.	12,999 2
W. Downs	13,386 0	Clarke & Bracey	12,583 0
		Treasure & Son*	12,188 0
		T. L. Green	11,292 0

ENNERSDALE-ROAD SCHOOL.—Enlargement by 414 places. Providing three new classrooms—50, 48, 40 for each department; new staircases for boys and girls; additional cloakrooms for each department; extending corridor on each floor, and providing new entrance to main building for infants :—

W. Downs	£8,424	J. & M. Patrick	£7,049
Kirk & Randall	8,236	Smith & Sons, Ltd.	6,962
F. & H. F. Higgs	7,803	J. & C. Bowyer	6,897
Johnson & Co.	7,752	Johnson & Co., Ltd.	6,730
T. D. Leng	7,548	Treasure & Son, London and Shrewsbury*	6,654
Bulled & Co.	7,379		
Garrett & Son	7,355		
Holliday & Greenwood, Ltd.	7,290		

[See also next page.

HEAD OFFICES (I.S. Department).—Providing a cupboard and converting a single desk into a double desk :—

	£	s.	d.		£	s.	d.
Spencer & Co...	112	19	4	London School Furniture Co.	65	9	0
H. Bouneau....	105	0	0	Wake & Dean, Ltd *	61	10	0
T. Cruwys	94	0	0				
Hammer & Co., Ltd.	92	0	0				

NORTHWOLD-ROAD.—Providing and fixing complete low-pressure hot-water apparatus to three halls ; also to eighteen classrooms (ground, first, and second floors), drawing classroom, cloakrooms, corridors, and lavatories :—

	£				£		
Cannon & Sons....	795	0		Brightside Foundry and Engineering Co., Ltd.	669	0	
Dargue, Griffiths, & Co., Ltd.	765	13		G. & E. Bradley ..	615	0	
Wenham & Waters, Ltd.	708	0		Knight & Sons	594	0	
J. & F. May.....	690	0		J. C. Christie.....	555	0	
Oldroyd & Co., Ltd.	670	0		Duffield & Sons ..	500	0	
				Defries & Sons, Ltd.	490	10	

SCARSDALE-ROAD, ESSEX-STREET, and MARNER-STREET.—Repairs to furniture :—

	Scarsdale-road. £	s.	d.	Essex-street. £	s.	d.	Marner-street. £	s.	d.
H. Bouneau	38	10	0	105	19	0	29	3	0
T. Cruwys.....	35	17	6	108	0	0	31	6	0
R. H. Galbraith.	37	19	9	99	4	0	31	19	8
General Builders, Ltd.	39	0	0	99	0	0	35	0	0
Hammer & Co., Ltd.	*28	7	0	*80	0	0	*24	1	6
London School Furniture Co..	32	4	6	86	4	3	28	11	6
Waring & Gillow, Ltd.	44	2	0	113	8	0	42	0	0

SUMMERFORD-STREET.—Repairing nine stoves.
BREWHOUSE-LANE.—Repairing six stoves :—

Contractors.	Summerford-street. £	s.	d.	Brewhouse-lane. £	s.	d.
Landers, Ltd.....	57	0	0	—		
Wontner-Smith, Gray, & Co.....	51	0	0	34	0	0
Cannon & Sons	49	10	0	33	0	0
Hendry & Pattisson, Ltd.	21	5	0	16	10	0
Coules & Son.....	24	18	6	17	10	0
J. Bond	22	10	0	15	0	0
Rockhill Bros.	*18	0	0	*12	10	0

SUMNER-AVENUE (P.T. Centre).—Providing and fixing fittings in science-room :—

	£				£		
H. Bouneau .....£	190	0		General Builders, Ltd. £	149	0	
Spencer & Co.	175	0		London School Furniture Co.*	120	6	
Hammer & Co., Ltd.	163	0					

Supply of church oak varnish and vermillionette, on a running contract :—

	Varnish, per gallon. s.	d.	Vermillionette, per lb. s.	d.
Atkins, Bussell, & Co.....	5	6	0	6
Blundell, Spence, & Co., Ltd.	5	6	0	6
Davis Bros.....	*5	6	*0	6
T. & W. Farmiloe, Ltd. ..	6	0	0	4
H. E. Kershaw	6	6	0	9
Nicholls & Clarke, Ltd.....	9	0	1	0
Wilkinson, Heywood & Clark, Ltd.	7	9	0	4

B. NOWELL & CO.
STONE MERCHANTS & CONTRACTORS.
Chief Office.—*Warwick Road, KENSINGTON.*
Norway, Guernsey, and Leicestershire Granite, Kerb, Pitching, and Yorkshire Stone.
ESTIMATES GIVEN FOR EVERY DESCRIPTION OF ROAD MAKING.

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Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE noon on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS Advertising in "The Builder" may have *Replies addressed to the Office,* Catherine-street, Covent Garden, W.C. *free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

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READING CASES, { NINEPENCE EACH. By Post (carefully packed) 1s.

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"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom, at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to DOUGLAS FOURDRINIER) should be addressed to the publisher of "THE BUILDER," Catherine-street, W.C.

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W. H. Lascelles & Co.,
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Telephone No. 1365, London Wall.
HIGH-CLASS JOINERY,
LASCELLES' CONCRETE
Architects' Designs are carried out with the greatest care.
CONSERVATORIES,
GREENHOUSES,
WOODEN BUILDINGS,
Bank, Office, & Shop Fittings,
CHURCH BENCHES & PULPITS.
ESTIMATES GIVEN ON APPLICATION.

THE BATH STONE FIRMS, Ltd.
BATH.
FOR ALL THE PROVED KINDS OF
BATH STONE.
FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

HAM HILL STONE.
DOULTING STONE.
The Ham Hill and Doulting Stone Co.
(incorporating the Ham Hill Stone Co. and C. Trask & Son The Doulting Stone Co.)
Chief Office :—Norton, Stoke-under-Ham, Somerset.
London Agent :—Mr. E. A. Williams, 16, Craven-street, Strand.

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Employ a large and efficient Staff especially for Bills of Quantities, &c.
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QUANTITIES, &c., LITHOGRAPHED accurately and with despatch. [Telephone No. 434 Westminster.
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"QUANTITY SURVEYORS' DIARY AND TABLES," For 1901, price 6d. post 7d. In leather 1/- Post 1/1.

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Driven Tube Wells. Driving Apparatus.
WINDMILLS.
THE LION, made of Steel, with Steel Tower; for Pumping from Deep or Shallow Wells, and for Driving Dynamos and Sewage Pumps.
PUMPS OF ALL DESCRIPTIONS.
ALFRED WILLIAMS & CO.
Hydraulic Engineers. Contractors to H.M. Govt.
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PATENT ASPHALTE and FELT ROOFING.
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WHITE SILICA PAVING.
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THE PATENT MATERIAL FOR
GLAZING BRICKS, TILES, & WALL SURFACES.
THE WHOLE GLAZE SUPERSEDED BY A SUPERIOR AND CHEAPER PROCESS, WHICH CAN BE APPLIED TO BOTH OLD AND NEW BRICKWORK.
Prices specially quoted for Glazing Old and New Brickwork.
"OPALITE"
Orders can now be promptly executed, and architects' designs carried out with care and despatch by competent workmen.
WM. GRIFFITHS
(*London Concessionnaire of Patent Rights of the National Opalite Glazed Brick and Tile Syndicate, Limited*),
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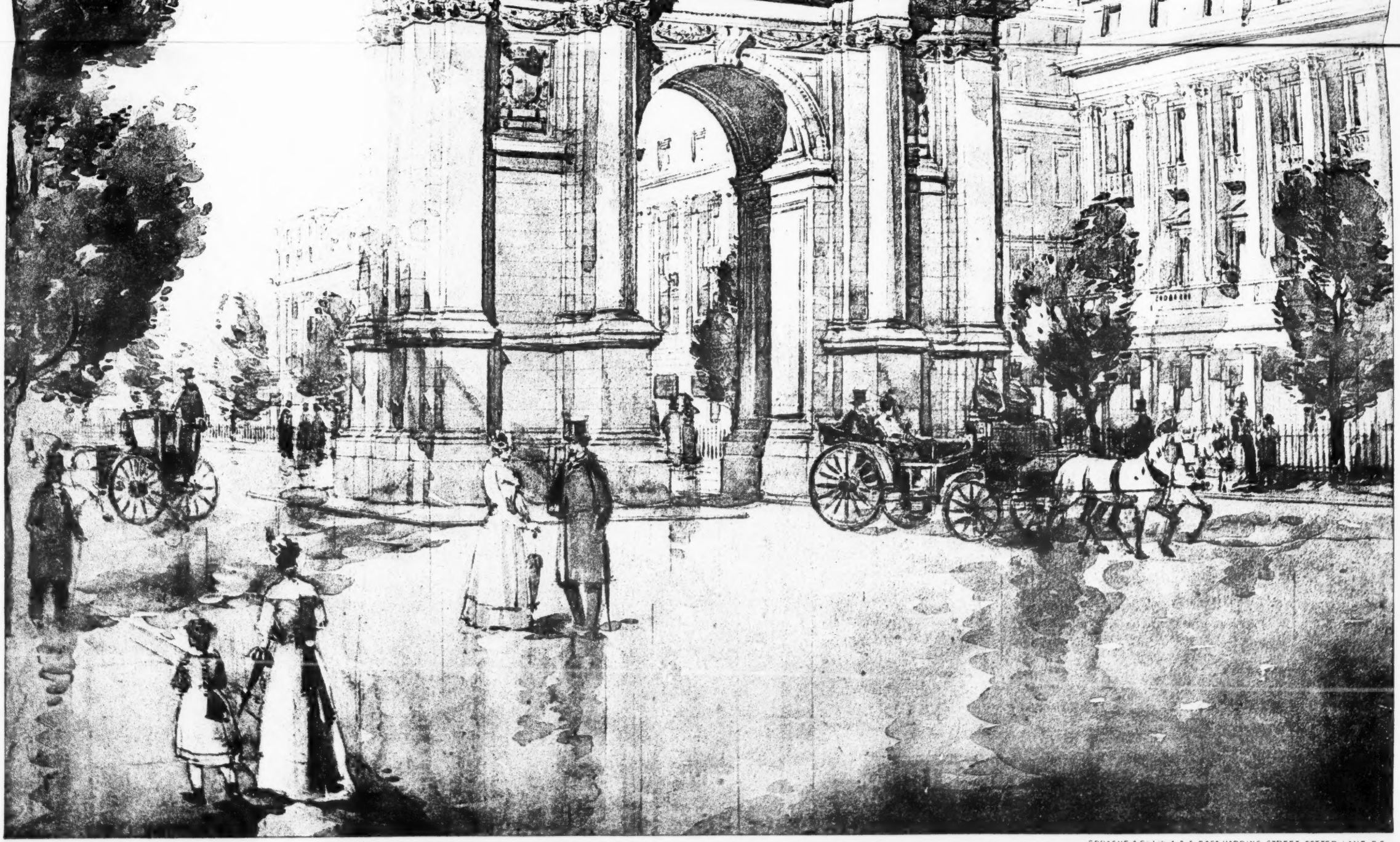
CHARLES A. LINE, *Telegrams* : "Silicate, Birmingham." *Telephone* 1194. 18, BURLINGTON CHAMBERS, 118, NEW STREET, BIRMINGHAM.
Sole Licensee in Warwickshire, Worcestershire, & Staffordshire.



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DESIGN FOR TRIUMPHAL ARCH, BY DR. ROWAND ANDERSON

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S. Denys, Sleaford, Lincolnshire.

Rood Screen.

May 1894. As existing.

Drawn by Mr. Herbert Kirk,
Diocesan Surveyor, Sleaford.

Elevation looking East.

Section A.B.

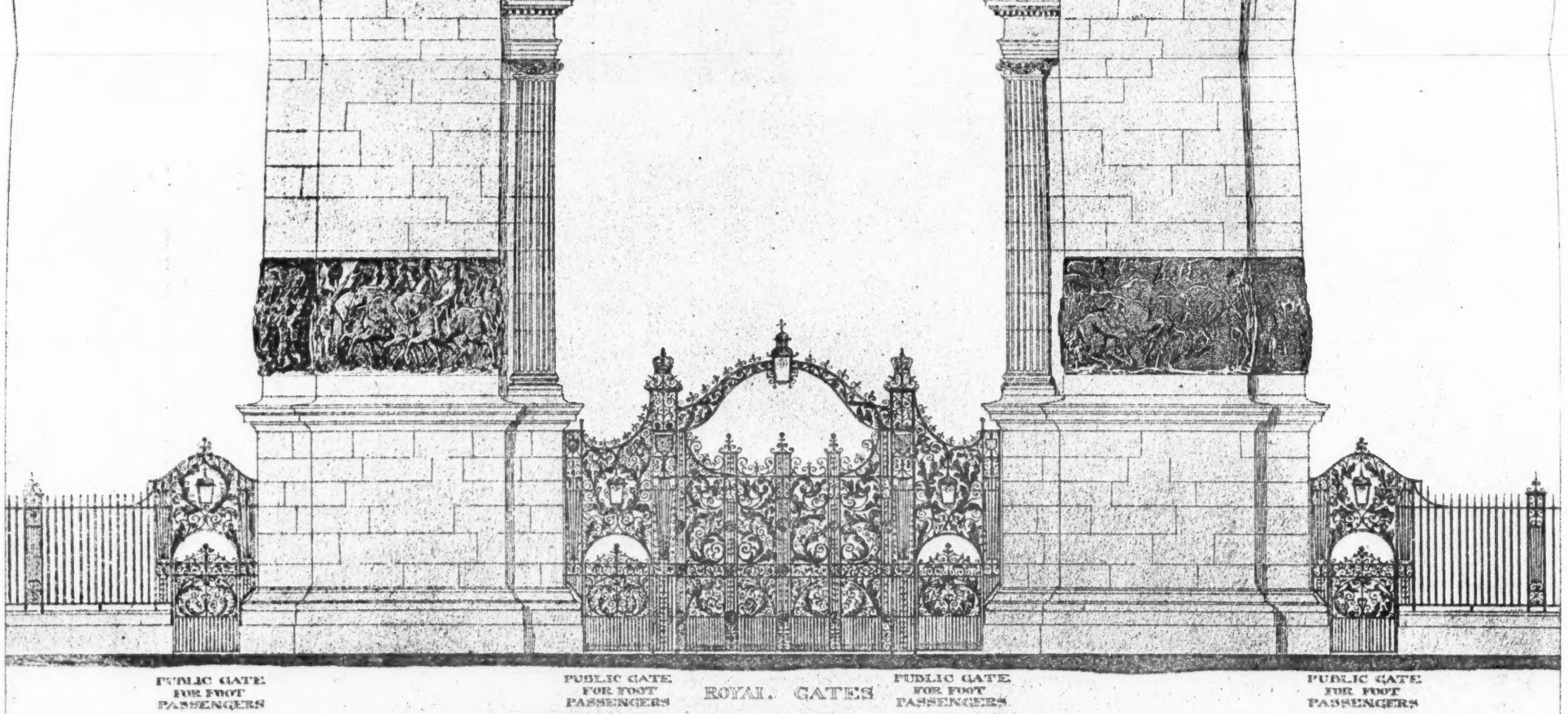
Part Plan of Nave and Chancel.

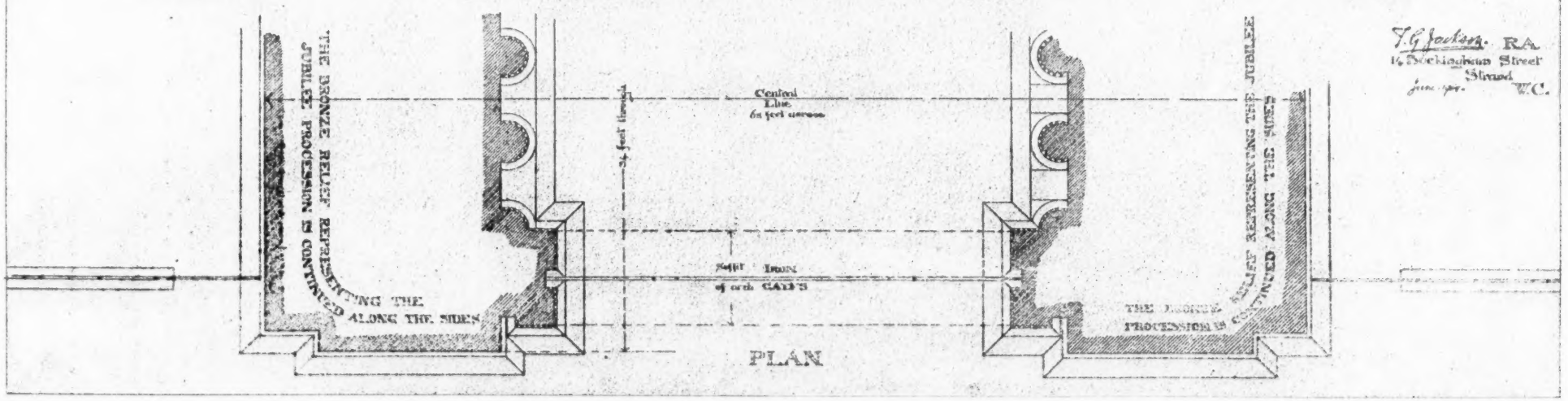
PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

QUEEN VICTORIA MEMORIAL

ARCH AT EAST END OF AVENUE

SCALE OF FEET
½ INCH = 1 FOOT


PUBLIC GATE FOR FOOT PASSENGERS
PUBLIC GATE FOR FOOT PASSENGERS
ROYAL GATES
PUBLIC GATE FOR FOOT PASSENGERS
PUBLIC GATE FOR FOOT PASSENGERS


THE BRONZE RELIEF REPRESENTING THE JUBILEE PROCESSION IS CONTINUED ALONG THE SIDES
Centred Line 60 feet across
36 feet through
Width from 4 arch GATES
THE BRONZE RELIEF REPRESENTING THE JUBILEE PROCESSION IS CONTINUED ALONG THE SIDES
PLAN
T. G. Jackson. R.A.
16 Buckingham Street Strand. W.C.

SPRAGUE & C° Lith 4 & 5 EASTHARDING STREET FLETTER LANE E.C.

VICTORIA MEMORIAL COMPETITION;

DESIGN FOR TRIUMPHAL ARCH AND ENTRANCE GATES TO ROADWAY.

By Mr. T. G. JACKSON, R.A.

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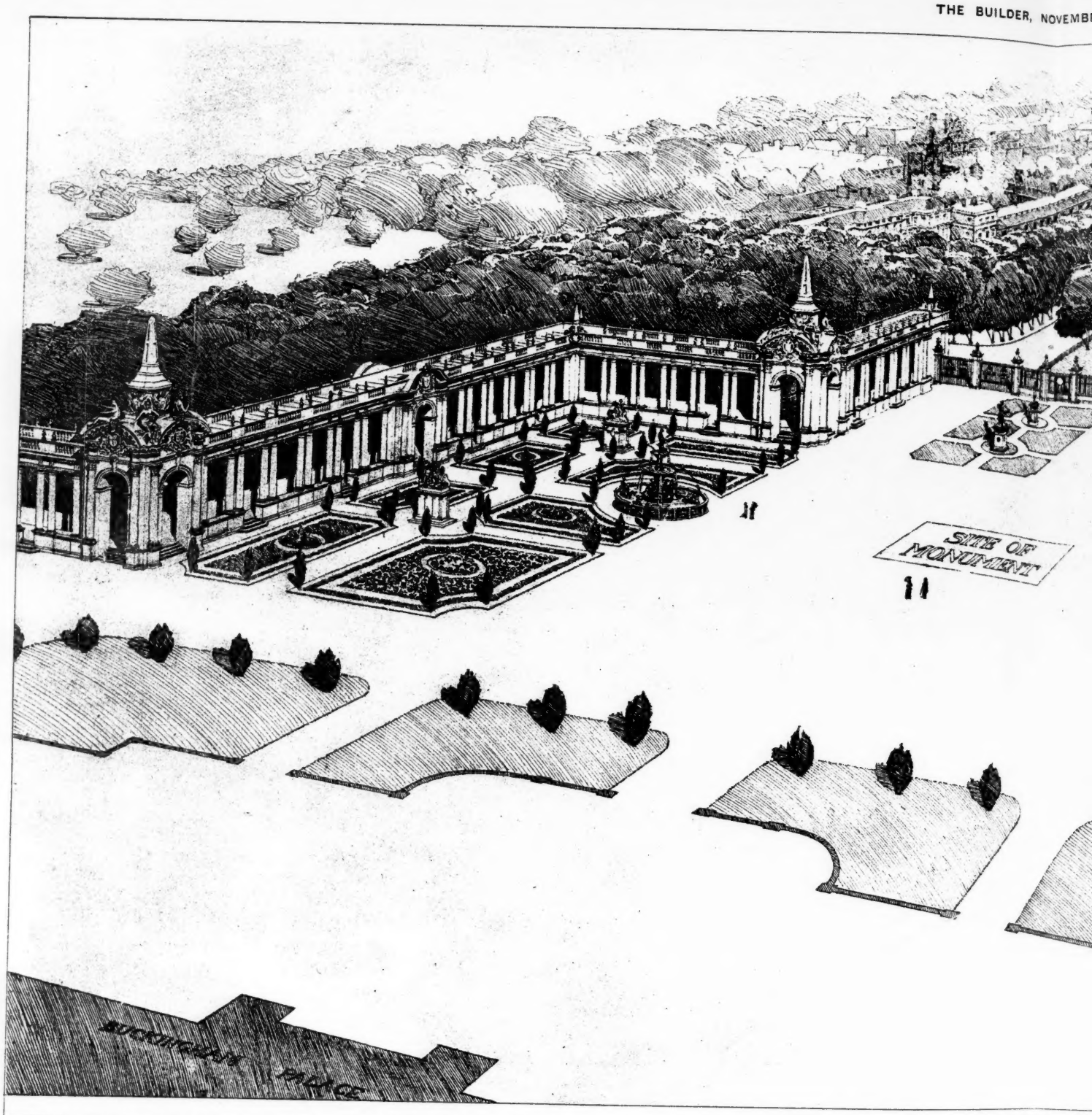

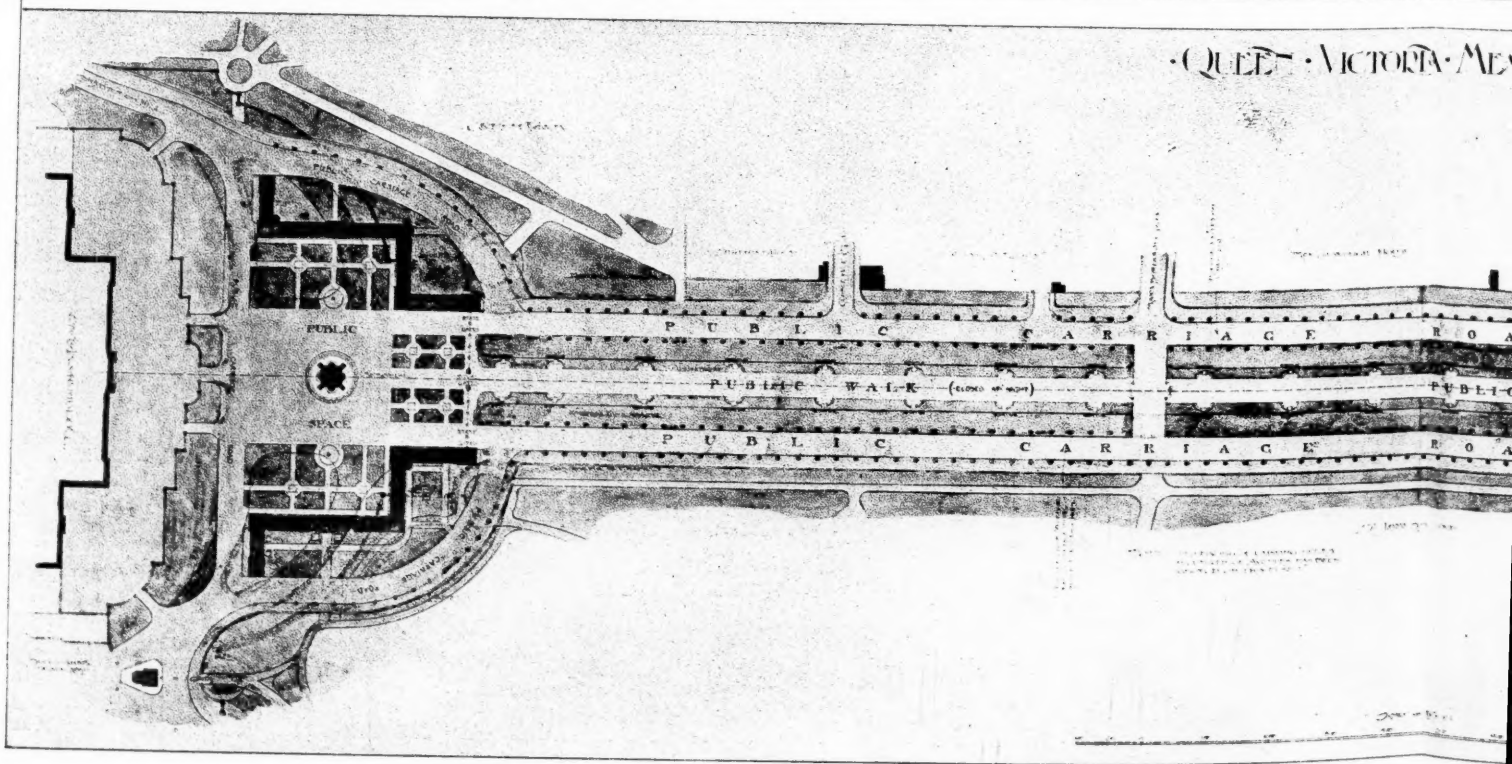

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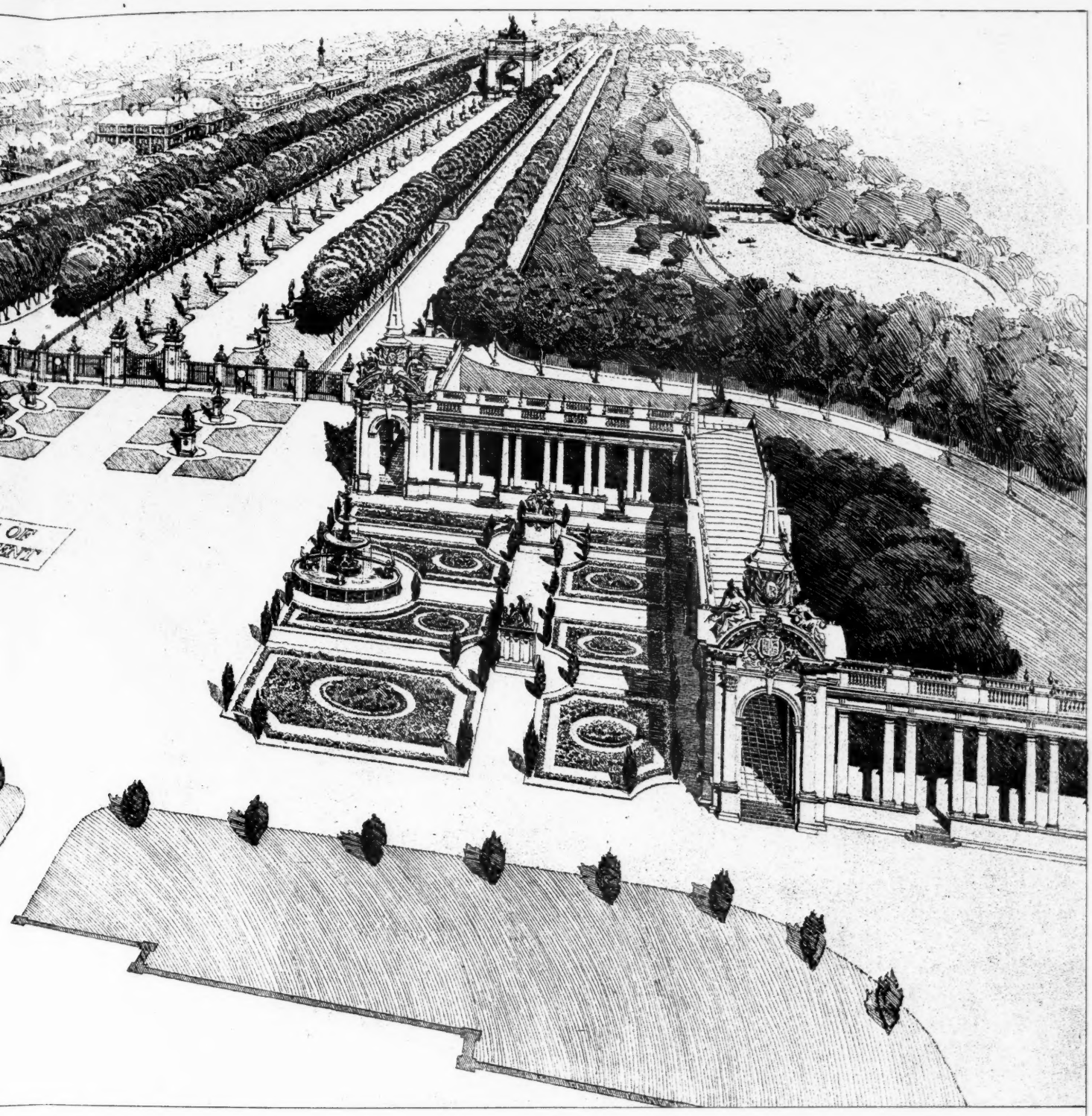
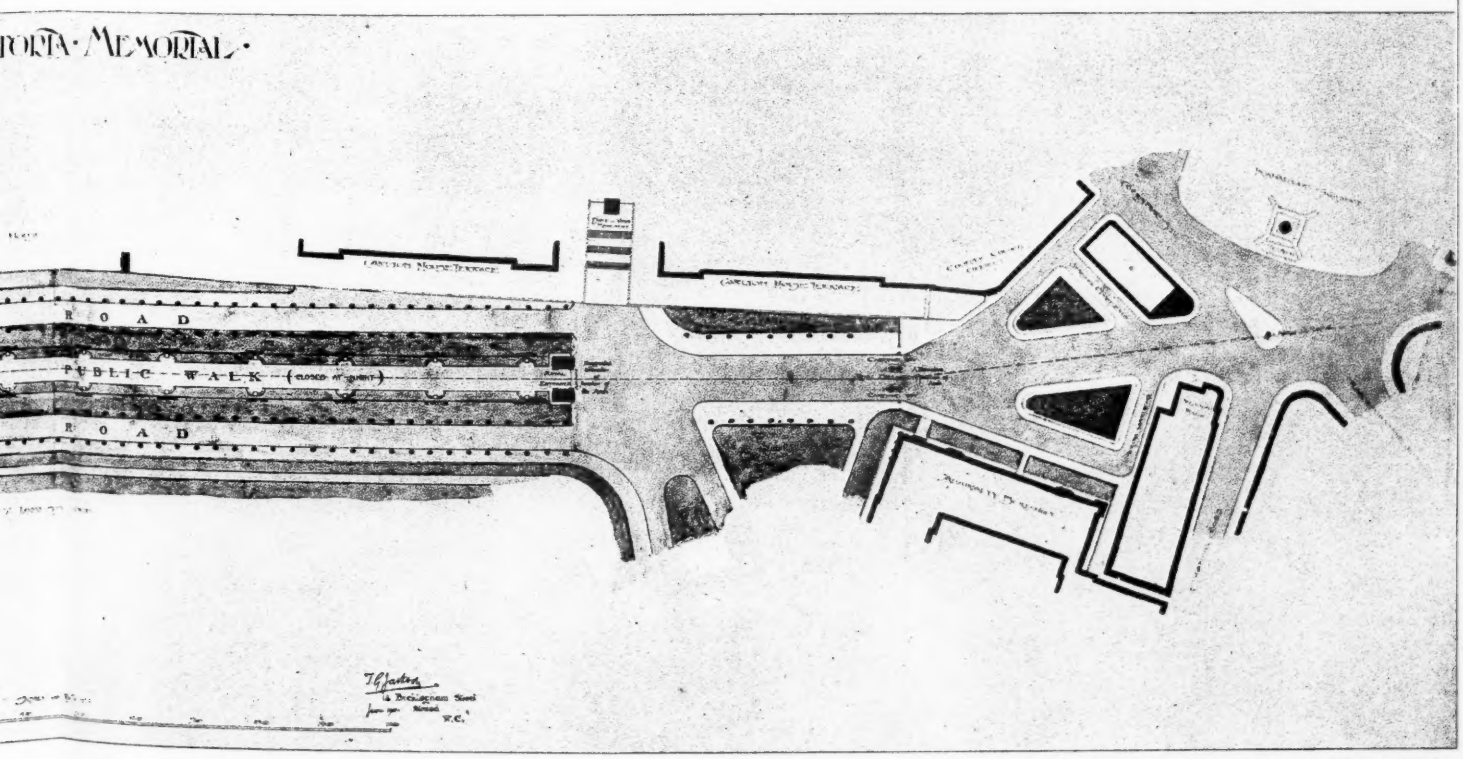
GENERAL VIEW AND PLAN OF DESIGN BY





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